

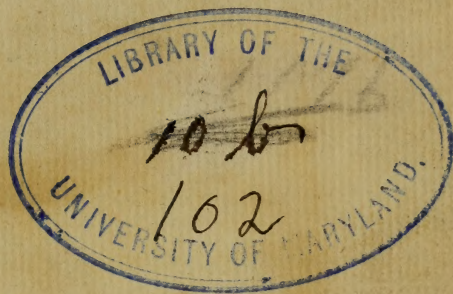
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Alexander Leslie
Lectures on Medicine
Edinb. 1758 Taken by
J. M. Hamilton Smith

John Cranford,
M. D.

Dr. Phil. 25. - - 0. -

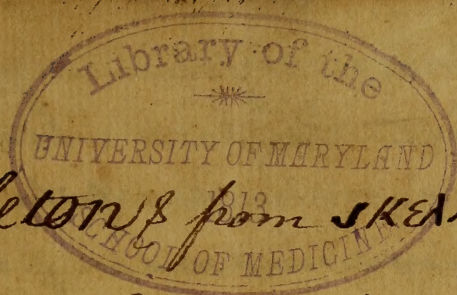
John Hamilton Smith
his book - 5758 -

v. 1, pt. 2 of
Morgan's Lectures 1



2001

crawford



249.

Skeleton from SKELLEIV to dry. —

62. Perpendicular Bearing to one another
Take only a cursory view to observe that
the part of the head that rests upon the upper
part of the Backbone is not its centre of gravity
for if head falls forwards when acting by its
own gravity, the Backbone is crooked al-
ternately backwards & forwards. the ribs &
haunch bones stand out transversely from
the Backbone, the arms are placed at right
angles to the ribs, the thighs are placed ob-
liquely and on one side of the haunch bones
the forearm is not in a straight line with
the arm, the hands deviate from the direction
of the forearm, the legs are not in a straight
line with the thighs the feet stand nearly at
right angles with the legs. yet you see that
when we stand or sit the Body is supported
without any External assistance and therefore
the centre of Gravity falls upon its common
Base

250. Base tho' these Muscles be forces employed
at many of the particular parts where the weight
deviates from the perpendicular. Whenever
these forces are too weak as in people
falling asleep or those that are weakened
by diseases you see their gravity acting in
several parts and altering the situation of
the person and when by this means the
situation of it is altered then it falls to the ground
if some External support is not given it.

The straining wth the Natural organs are
obliged to make in resisting the gravity of
the particular parts we are not placed in a
perpendicular bearing to them below them
soon appears in weak people by if we are up
& acting pain wth they soon feel in standing
or sitting and if these postures are continued
long the strongest persons at last fatigued
but if these organs are relieved by acting al-
ternately they can exert themselves much
longer without weariness. We are happy for
us that if most necessary labours require a
change in the situation of the body.
Greater quickness I shall have occasion
to.

to mention the advantages of Natural Shew: 251
:ation of the Bones as I proceeding Demonstration
of the particular parts.

63. From reason of Muscles in action
have all their fibres tense & upon of stretch and
the circulation of of liquor in of ^m is not so free
as when relaxed; the tension of the fibres or
Impediment to of Circulation are not both causes
we Endanger of Structure of the parts and our
Creator has annexed this general Law to our
Constitution that if Mind should suffer by
the Idea we call pain whenever any other part
of the body is hurt or in danger of being so
by the operation of any agent then acting upon
it by w^{ch} the Mind is prompted to perform some
action by of of Body may avoid of danger or to
search out for some relief for if hurt it has
already suffered.

64. Equal pressure & Whenever therefore
this pressure is made in a different manner
from of ordinary the shape of of Skull ought to be
different. Thus I'm assured that wry-necked people
have the ~~side~~ of of Skull lower of head inclines much
deeper than of others.

252. Turks Skull & the Turks very soon put
Turbands upon their Childrens heads which
hinders them from being protruded so far as they
would be in the fore & back parts and so makes
their temples rise more.

German & Pevallius says in his days the
German used to lay their Children to sleep on
their Backs by wth their Output was made
flatter & broader by y^e weight of their heads.

English & Dutch lay their Children al-
ternately to sleep on both sides & therefore
make the sides of their heads flat.

60. Enlargement of the Sphere of Vision &
Let any one put his hands or any substance
on his temples till he make that part of the
head circular and then view ~~that part of the~~
as much round him as he can without mov-
ing the head or body but only by turning his
Eyes then taking away what he put on his
temples let him look round in the same way
and he will find how much more he sees now
than he did when his temples were raised.

Quantity of Sound & Sound you know
is reflected from Bodies as well as light by the
same

same Angle with which it was made and it is reflected Sound we are principally obliged to for the strong enough Impressions our ears receive from Sonorous Bodies as is evident from hearing much more easily the same person speaking or Instrument struck in a Boxed room than in an open field or in a Valley than on the top of a Mountain.

Besides this Sound reflected from Bodies around us our own heads reflect Sound of falling upon our External Ear a part of our hearing whereas had our Ears stood more prominent the reflected Sound of the head could not have fallen on the Ear.

67. Collection of Matter in the Dura & Bonettes in the place here quoted has collected history from different Authors of the Internal part of the Cranium being eroded when the External was entire from of the patient suffered very violent pains in the part, some were thrown into the Epilepsy and some into the Palsy & some died Immediately. There is reason to suspect such a collection if there is a fixed pain in one particular part w^{ch} is constant altho' it

254 It have some Permissi^ons, if the patient has
ever had this part Bruised, if he has laboured
under the Lues Venerea, Scurvy or such other
Diseases as attack the bones; after trial of othr
Medicines without success it might be reason-
able to apply the Trepan to the part penetrating
no further than the Diploe at first and upon
stinking humours coming out of it the Inner
table should also be perforated to allow a discharge
to the Matter we probably by this time has eroded
the Inner table of the Skull & affected of Internal
parts. I shall now relate the history of a cure
we I imagine to be of this kind. —

O. P. Master of a trading vessel fought a Spanish
Privateer with fewer Men than the common rules
or his duty required him to do, and killed many
of the Privateers Men we enraged the rest so much
that when he struck and they came aboard one
of y^m cut him in the middle of the Os frontis with
a Cuttaw, the wound healed soon but afterwards
he was tortured with violent pains in his head
for a year or two when the wound opened again
and the bone was found Carious; he then had
lep

less pain than before. he shewed me if you and 255
I advised him to apply Bulks & Bread to it at
night and to cover it with a plaster all day
and to expect the Galing out of the Carious
part. he went afterwards to London where
~~he was~~ scalped having asked advice he was
scalped / that is a round piece of the tegument
was taken away / and Lintones were applied
to the bone the Caries still spreading now &
now so that when he returned to this place
the whole upper part of the frontal Bone about
the size of the palm of my hand was entirely
Carious with several holes thro' it so that when
he held down his head & kept in his Breath
a considerable quantity of greenish coloured
fluid pus ran out at every drepana; as the holes
were small Dr Young and I caused a perforation
to be made with the Trepan thro' the bone on
one side but within the Bone there was no
flesh or Dura Mater to be seen; the whole
surface of the Beating substance we saw
was covered with a stinking substance like
soft blue Clay of w^{ch} we gently abraded now
than the thickness of the ^{is} of an inch without
getting

256. getting thro' it seeing such a substance inter-
posed between the Bone and Internal parts we
caused perforations to be made round the whole
Circumference of the Carious bone, then breaking
the bridges between them we took out if whole
except a Margin at one side where it adhered
firmly to the sound bone, whereas at the other
sides such a Separation was begun as let us
raise it up with a Levator the whole Surface
of the Cranium was coloured with the clay
coloured stuff. Dry lint applied and a plate
of white iron was put over the Dressings, the
Clay & Matter came away with it dressings
and good Matter granulated flesh & rose up from
the parts below. he went 18 Miles to his Country
in a few days after and continued to dress it in
same way, the flesh that rose up gradually
hardened so that in a few Months when he
returned to town it was almost as firm
as the rest of the Skull. a little ^{piece} of the
Carious part was not then separated but has
come away since and he is in perfect health
with an easy thro' unscarcely (matrix); whether
the Dura Mater was whole or Eroded or whether
the substance of the Brain had suffered I know
not

not for we did not choose to gratify curiosity ²⁵⁷
at the expense of the patient and therefore
saw nothing but the putrid bluish grayish
stuff at first the granulating flesh thrusting
it off afterwards.

An useful caution & This is a remark
of Bartholinæ's Anat. Reformat. lib: 9. Cap: ¹⁴ 11.

68. Corona or Garlands & Riolan Comma
de opibus Cap: 8 thanks it from the Corona
of plaited hair w^{ch} some men turn upon the
part of their heads.

69. The specific Virtue & The whole
Skull especially of those who died a violent
death was long esteemed a specific in Epilepsy
and even since I began to practise & teach in
this place the Pulv: Cran: humani: violentæ
mortis Cabinet. was one of the Ingredients
of the Pulv: Antiepilept. and on that account
I used to be greatly importuned by & Apothec:
carriers to give y^e m^e a piece of the hanged fellows
Skull after directing y^e m^e this Ingredient
is now left out in the latter Editions of our
Dispensatories and fully as it can have no
other

250th other virtue than the powder of any of bones.
If the common bones of the skull were thought
to have great virtue these uncommon ones
the op^a Inguetra were thought to be infallible
even when worn as an Amulet or Charm
long as high price and rarity stamped great
Medicinal powers on a variety of uncommon
things but now Chalk and oyster shells have
put our Coral Bezzar & many such fooleries
even all powerful Gold is no more prescribed
to be mixed with a powder or potion to be
swallowed after infinite pains had been taken
to make it potable y^t for all the preparations
of the different parts of the human body as y^t
Adeps, Blood, Placenta Bones &c are no more
Employed.

70. But others alledge y^t People with flat
foreheads were said to want y^e Coronal Suture
and those wth their Output less protuberant than
ordinary were thought to want the Lambdoid
Suture. Whoever examines a Number of skulls
will see that their shapes don't betoken any
want of Sutures all of them are seen unless
when the bones run together by age.

75. That is Lapoula & Had there been only ^{259.}
one point of the Cranium where the ossification
began and from which was Extended that point
being the firmest and all the other parts grow
and grow Extended as they recede from it, the
Cranium must have been all one Pyramid
or if there had been two points of ossification
it would have been a Double Cone with a
Common Base, but by its having numerous
points it approacheth to a Sphere as a
Polygon of ^{very} many Sides comes near a Circle.

When we in hard labour in Childbed &
I told you the history of such a case when
I was endeavouring to prove the necessity
of studying Osteology under of words
or production of one piece be.

Transpiration & Galen & other ancients
observing the Brain soft and juicy with
Lymph drilling from it when they dissected
it thought there was a necessity of the
Phlegm or Pituit being evacuated they ima-
gined the gross parts drilled thro' the
holes

260. holes of the Skull and that the finest and
most volatile passed thro' the pores of the Skull
and teguments of the head in Steam of vapour.
But the Pericranium, Dura Mater and other
parts appearing of too close and compact a
texture to let Steam pass thro' y^m the Anci-
entian Doctrine of Perspiration shewing
them the source from whence the Steam
rises from the head. And the Harveian
System of the Circulation explaining
how liquors could be taken up by the
Vessels as well as brought thither by y^m
the Transpiration was renounced and
the Moderns only allow a communication
between the Internal & External vessels
of the head thro' the edges of the bones
we are joined to each other by Sutures.
But there would be a very great difficulty
improving any considerable communication
of Vessels this way for Injections will not
pass here even in young people and in old
ones some of the Sutures are obliterated

and generally no spaw left for the use of the 26th pap.

Cucuphs & Little Small cups or Bags filled with what are called Cephalic Med: we are generally Aromatic mostly however of a good flavour we are ordered to be applied to the upper part of the head so as to cover the coronal, Lamboid and Sagittal Sutures where also fomentations are put so far at least this part is convenient that if Med: can be kept without any trouble.

Cephalic plasters & I remember some there was great pains taken to shape the leather on wth the Cephalic plaster was to be spread exactly to the extent of 3 Sutures @ mentioned, but now when physicians think plasters of this kind necessary they expect better success from y^m of larger they are and therefore they put y^m of larger share of the hairy Scalp.

Blisters & small plasters for perpetual
issues

262 Issues were formerly put exactly at the meeting
of the coronal and sagittal sutures or of the
sagittal and lambdoid sutures when the
unopification is at birth, now if consequence
of keeping it on and the vast uneasiness to
the patient in lying is what determines
the perpetual Issues to be put on the upper
part large Blisters are commonly ordered
to be applied all over where the hair
grows in the violent cephalic disorders
and that frequently with very great Ben-
efits to the patients, but this may happen
there was neither Transpiration nor
Communication of the vessels for 1st A larger
Blister can be applied here than any where
else 2^{dly} It can be allowed to be longer on if
skin without any fear of Mortification
than on any other part of the Body; Blisters
to the head are allowed to remain two or
three days while these on if other parts must
be taken off in 10. 12 or 14 hours 3^{dly} The
Irritation of the Nerves distributed to the skin
of the head may produce a greater effect on
the internal parts than if Irritation of the

flowers could at a distance do. 1^{thly} The discharge
made by Bladders from the Branches of the Exter^{nal} 263.
nae Lard^{er} may do better than a discharge from
Vessels we did not arise from the same trunk.
76. Issues of The same place was chosen for
the Pea issue as for the perpetual, and the same
reasons determined us to put y^e in the upper
part of the head.

Phrenitis & These are diseases different
from any thing relating to y^e bones, that it
would be to go off entirely from my subject to enter
upon y^e Account of y^e m^o, you'll hear y^e m^o naturally
treated by my Colleague the professor of y^e practice of y^e phys^{ic}.

They apert^{ly} Columbus relates a particular
history of a young Gentleman who laboured
under a violent head-ach^e of w^hch we could not
be cured by any m^o and in whose skull I saw
any vestige of Sutures could be observed the bones
being so closely united that they seemed all as one
Bone, he says that this is not y^e only example
that he had seen for that he had depicted 1st a
who had perpetual head-ach^e and whose Sutures
were very close and almost run together by w^hch

264. he thinks if fuliginous vapours were detained
and caused these headaches. Verduin only affirms
that headaches may arise from if Sutures being
too close but then gives an aid from if being
:ous Mr Paschal who had a headache because
the Sutures were too wide.

Dionis mentions Mr Peasant a Surgeon who
had his Sutures Obliterated by wth the acid lymph
being stop'd Cracked the bones and gave sometimes
violent pain he likewise mentions if too great
closeness of the Sutures of 3 Children in France
of the Royal family as the Cause of their Death
In these and several oyr such histories there is
no proof of the closeness of Sutures may not be if
Cause of their headache or death tis only the
opinion of the Dissectors founded at least on
the precarious Theory of fuliginous vapours
passing always thro' if Sutures.

If all people who are troubled wth headaches
obliterated Sutures the ascribing this as a Cause
might in some measure be just but since this
fact cannot be ascertained wth truth we ought
not to follow these authors whatever Character
they may have.

The

The Expectations we relations have of being 265.
informed what was the cause of death in an organ
is a temptation to a train of dishonest spirit
complex and who is much afraid of imputation
of ignorance to take hold of any appearance
different from the common way and perhaps
attribute the death of the patient to causes
that never existed but in their own Brain
on these accounts the Observations are to be
read with prudent caution, we are carefully
to distinguish between the things the
Observer saw and what he is affirming
from Theory or Imagination. At least $\frac{2}{3}$
of Bonetus's Sepulchreum Anatomium
ought to be read in this way. I don't mean
by the reflection to blame that collection
more than other Observations, I only men-
tion this book as it is of largest of such
Observations and as my Subject naturally
leads me this way.

That the Dura Mater & Cohære of Cranium
is unapplied and behind the Dura Mater
and Ligamentous Cartilaginous substance of

of the Cranium adheres so firmly that they seem
 to be of some substance gradually as if Ossification
 proceeds the adhesion is less than it was but it
 is greater here than in any other part of the
 Cranium this owing to there being stronger
 fibres sent out from the Dura Mater between
 the Sutures or into the bones at their sides
 than any where else. Thus the support
 of the Falx by its connections to the Sagittal
 Suture of the lateral process of the Dura
 Mater by a part of the Lambdoid suture
 is evident and the situation of the Longitu-
 dinal Sinus of the lower part of the Late-
 ral & Petrous is what all Anatomists
 know to be near Sutures.

That Fractures & that fractures must
 stop where there is not a continued bony
 substance is certain and to dispute
 whether there is an accidental advantage
 or the original intention of our Creator
 is very idle.

To separate & therefore that this could
 never happen in an adult by reason of the

the Dura Mater out of joining wth the Sutures 267.
have notwithstanding of great Separation
observed in the Hydrocephalus in Children
but some great force is applied to push the
bones outwards and asunder as in all the
hement Coughs & Vomiting since if Sutures
of the Sutures are not always dovetailed
and some authors of very good Credit affirm
they have seen & felt such openings of the
Sutures we must in some measure depend
that such a deficiency may happen however
if we were allowed to reason a priori
we would think that a force strong enough
to press upon the Sutures would destroy the
patient unless the Sutures gave way because
the Brain would otherwise be destroyed
and on the other hand such a stretching
of the Dura Mater Pericranium & Arachnoid
as when the bones of the Skull separate so much
as could be perceived with certainty thro' the
teguments would create very violent
disorders especially if the stretching was
sudden.

Great relief & Antonius de Pozzo tells
us of a Colonel whose Dura Mater was
torn

268. ~~town~~ with great force under a Debauch and drink-
ing, he was never at rest except when
the contiguous Extremities of the Sagittal
~~Suture~~ Cranium near the Sagittal Suture
stood at an Inch distance from each other
And when they were thus placed he could
drink Brandy Menstruo and filled many
drunk without being drunk himself.

77. Judged to have been hurt & Lucas
Schrokius tells us a young woman about
20 had been cured of a violent headache
by him in November & returned in Dec^r
the Sagittal Suture opened a finger's breadth
yet he cured her perfectly by giving her
a purgative & Opials and applying a little
Jug of Sage Marjoram and Succinum.

Thos Schrokius then to the opening
a Disease yet it is rather to be judged a relief
from the headache, however he does not say
whether the bones went together again or not.

Dr Helwicht Cent. & Observ: 31 has collected
several histories of the separation of Sutures
from Aeneas Aldamus Jacobus Boetius
Pecklin &c. the case which he tells he saw was
of

was of a weak & delicate woman who after
being long troubled with a headache he saw of 269.
Sagittal suture separate the breadth of the
ring finger; he thinks if pain had become
much sharper when the bones separated by
stretching the Dura Mater the chief relief
this woman had was by pressing the bones
together first gently and then more strongly
it was almost two weeks before the bones
went together again; But as in most cases
related violent headache had preceded the
separation of the bones I must think the
patient must have suffered if the suture
had not yielded tho' perhaps in some cases
the pain was now violent after the separation
the method of cure in such cases is certainly
due preparation to bind the bones from going too
far asunder and removing the original
cause the headache.

79. Near its Middle & Ruysch calls it vas
Sanguineum Notabile but does not determine
whether Artery or Vein.

Open these vessels & The opening of this
Artery is indeed commended by Dr Blair
for

270. For removing obstructions in the branches
of the Internal Carotids in Nervous fevers and
several other disorders as is said to have been per-
formed with good success. how one can be certain
in opening an Artery with the point of a lancet
in a common operation of Bloodletting I don't
know for it is very small and if pulse of the
dom to be felt it lies deep within a tough
moveable skin the Orbicular & Corrugator
Muscles cover it so that for my part I could
not promise to do it without making a long
deep transverse incision, perhaps any benefit
the patients received was from other Meds.
they got or if this incision did any good it
might be from the Irritation made by wounding
the branches of the Nerves and not by the trifling
quantity of blood lost by the puncture of a lancet,
Here I should have added to if Chance here
mentioned of the Artery lurking in the furrow
of the bone and if it is cut immediately as it comes
out of the Superciliary foramen, the danger
of the Nerve's being superficially & sometimes
might be attended with dangerous consequences.

88. Pluck in the Cyxus Mortal & Ruysch
tells the history of a Man who was wounded
with a staff in the left Orbit, the wound was thought
to

to be they were at first but the Man dying his head ²⁷¹
was ordered to be opened when the bone in the upper
part of the Orbit was fractured and of brain
wounded. Diemerbroeck cites a case from
Fronellius when after a blow on the orbit ex-
travasated blood was found at the Base of the
Brain

84. The Effluvia of odorous bodies & This
is not to be understood as if the Membrane
contributed as much to smelling as that one
does we lines the Nerves themselves for there
can't be such a perflatus for one conveying
Odorous particles in the Sinus as in the Nares
but as much Change of Air is made in the
Sinus's every time we inspire & expire as must
cause some Change of Air there; and as a plain
proof that Odorous particles do ascend there we
often hear people complain of a sharp pain
there in this part of the head after inspiring
quickly and largely while they are holding
some volatile or aromatic substance to their
Nose.

These and the other of our organs of sense
are formed in such a Manner as to be sensible
of Objects not only by the force but Number of

27th of Impressions the objects make.

Thus I cannot rightly distinguish an object of touching by putting my finger very slightly upon it we feel by pressing my finger a little & now strongly to it, my finger applied to a very small object does not give a clear enough Idea of it but if the same sort of substance is large or if I move my finger quickly upon it same small body so as to increase the number of Impressions I perceive its properties.

We are often insensible of odorous Bodies till we increase the rapidity of the Air by inspiring quickly and when this fails of making us distinguish the smell rightly unless we make a quick succession of these Inspirations and every body knows that a large quantity of odorous bodies is easier perceived than a small one by the Nose, the same thing is to be observed of solid bodies as to their quantity and pressure we make between our tongue & palate.

All light moves so rapidly that we can make no Expts. whereby we can determine whether it moves quicker at one time than another so that we can say nothing of its velocity or movement from its Motion but this we know of Fire it is collected the inspiring force increases for a little

little piece of light paper is not bended or moved 273.
by the rays of light unless they are collected by
lenses or a concave & specular when paper
is move before y^e. Sound moves broadly with
a near equal velocity but if now an original
sound is multiplied by frequent reflections
the noise our Ears are compressed by it; the same
Instrument played upon by the same hand in a
Chamber when there are woollen curtains and
when these are removed sounds so very different:
ly: With y^e curtains it is low & unharmonious
without them it is loud & harmonious; the
sound of our voice formed in our glottis passing
thro' the Mouth and nose communicating
its tremor to y^e Aerial Medium thro' the Super Mem:
branes serve as curtains to absorb y^e sound.
and the greater extent these cavities are of to
reflect the sound now frequently our voices
may be stronger and now agreeable to the
Ear.

There is no part of the Mouth or Nose
where sound can be so well reflected as in y^e
Frontal Sinus's because they are covered wth
Elastic bones all around and with a thinner
more dense Membrane than any of y^e other
parts of these cavities and therefore are now
capable not only of reflecting the sound both
of

274. both of hearing the Sonorous vibrations Common
recalled to you and consequently of increasing
these Sounds more than when a thicker Mem-
brane is the Cover.

85. Coryza & That Catarrh attacks the
Membranes of the Nose as in the common running
of the Nose upon catching cold, the flow off Pituit
to the Membrane distends all of the pores & makes
the Membrane thicker so that not only the Nerves
can't be so much affected by odorous particles
but the sound being neither reflected nor mul-
tiplied is not so well heard nor so agreeable
when there is a Coryza as at other times, we often
feel this swelling so great that the Nostrils are
impervious to the Air so that we can't breathe
thro' the Nose.

To keep it moist & When the Membrane
of the Nose is too dry the Nerves are not sensible
enough to be rightly affected with objects as we
observe happens when people breathe a stilly
Air especially when there is a fine dust mixed
with it and if this dryness is so great as to occasion
a separation of the surface of the Membrane
of the Nostrils, an uneasy burning heat is felt
we these who travel in a clear stilly day may
be sensible of.

To prevent the Inconvenience of too great dryness
Nature has formed the Membranes wth vessels 275.
that are constantly throwing out liquors upon
their surface and lest these should not supply
enough of liquors the Cavities wth have not so
much perfpiration thro' y^m to dry y^m as the
Nostrils have vessels pouring out their liquor
on the surface of y^e Membrane wth lines y^m
that falls down into y^e Nares to moisten
the Membranes there and these Cavities are
so situated that in whatever posture y^e head is
put there is a descent of some of y^e m^{ts} of y^e
Nose and they open into such parts as make
all the Membranes of the Nose equally moist-
ened. From the aperture you have now seen
you must judge how the upper fore part
of the Nostrils next to y^e partition must
be moistened by y^e liquor that driels from
them.

Dr. Boerhaave on bad consequences of
Paaw finds fault with Parre for saying that
where the External table is broke there the
wound is difficultly cured and that the in-
curable Ulcers to be covered with a piece of
linen or plaster. And he tells us that he him-
self (Paaw) treated such wounds & observed
the air rush non absque impetu wth ignorant
surgeons

276. Surgeons believe to be if Air the brain blows
out. Palfyne after quoting Parrot & Fallopius
for the difficulty of curing wounds where the
frontal sinus's are opened gives us if history
of an Apothecary at Louvain who had for some
years a wound penetrating into the left
frontal sinus w^{ch} was all cured except a small
round hole w^{ch} could contain a middle sized
pear, when this hole was not plugg'd up the
air with his breathing rushed out with force
and he despaired of living long with the open-
ing because when it was open he was obliged
to shut it up with a small tent w^{ch} he renewed
every day and kept in wth an adhesive plaster
The apothecary told him he had been much
troubled wth a pain in his head before he had
received the wound but then he was free of
it. Palfyne attributes the oppression he
felt sometimes to a quantity of air escaping
at the hole when he inspired by w^{ch} means
the lungs did not receive enough but surely
this could not be of ease for when if Thorax
is raised and a void attempted to be made in
the lungs the air must rush thither by any
passage it can find so that if Palfyne had
been a surgeon he would have found if Air
eustings in at the hole in Inspiration and out
of it at Expiration what if Apothecary suffered at

at the time the hole was open was probably 277.
Owing to the perfatus of air bursting the very
sensible Membrane w^d naturally, has no
such perfatus thro' it.

Inflammation of it must create & I have
not but on a particular observation of this case
nor have I treated any under it but it is a very
possible one.

Fernelius Pathology: lib: 5: Cap: 7 says
he had seen pus run out of the nose after ab-
scesses circumscapides meaning near to if
ventricles of the brain or Mammary proeipies
without any bad consequences; but this could
not well be true for an abscess in ventricles
or Mammary proeipies would not have gone
off without bad consequences & the matter
could not have run out of the nose without
the Ethmoid bone had been eroded. If we sup-
pose in these cases Inflammation & suppuration
of the frontal sinus's the seat of pain might
cause Fernelius to mistake it for a true internal
part and the pus might have run out and the
abscess cured without any bad consequences.
A gentleman told me that some years before he had
suffered violent aching pain for some days in a part
in

278 in the forehead w^{ch} by his pointing answered
exactly to the right frontal sinus. Pus & blood
ran out at his nose the pain ceased & he became
soon well. the reason why I have not particular
history of such cases is if hypothesis w^d prevail
till of late that the Excrements of the brain are
Evacuated at the nose w^d made of Evacuation
of pus here he always reckoned some disorder
of the head.

Worms & Insects. & This is said to be a common
disorder among sheep and there are several histories
of these insects lodging in the sinuses. Fer-
rius Patholog. lib: 5 Cap. 7 mentions a
case of a flat noosed soldier who ex furore aqua:
dam colluvie duct: lo hab: became furious with
out any stamped fever and died 17th day
in whose sinuses were found 2 hairy
worms like to ones fingers.

Dr Langelot writes to Tho^s Bartholine
a case related to him by a physician in Dutch
Munster who said he had a worm in his hand
of the length of his middle finger w^{ch} was forced
thro' the nose of a woman in this manner

A country woman who had long felt violent
pains in her head at last run up & down like a

Inad person, the parish Minister gave her 279.
a Sterculatory we carried off the worm after
w^h the woman was free of her pain.

In the Year 1700 Mrs. Lillie gave us a very
particular history of a worm lodged here, a
woman of a good constitution and who had never
been subject to any disorder of her head begun
at the age of 36 to feel a pain fixed at the lower
part of her forehead towards the right side and
near the nose, this pain w^h was confined to a
small space at first extended itself as far as
the temple of that side and instead of a great
intermission from pain w^h she had at first
it became after two years almost continual
accompanied with convulsions & almost
perpetual want of sleep and at last became
so violent that the patient was like one agi-
tating and was delirious in the great fits
at the end of 4 years after having tried all sorts
of Med^s. without any relief she gave over the
use of any Med^s contenting herself with a
regular sort of living and snuffing some powder
of tobacco from w^h she hoped to have some relief
when she had used the powder a Month she

280. She sneezed one morning violently and threw
out a worm drawn together with a little blood
she was much frightened and lay in a moment
of tedious pain having nothing now to keep
her in remembrance of it than a little blood com-
ing away out of her nose for 2 or 3 days. The
worm was alive when it stretched itself out in
an Zigzag way we was its common posture
it was about 6 inches long, 2 lines broad
and $1\frac{1}{2}$ thick at its thickest we was about
the middle. It was of a clear colour lower
@ and flat below covered all over except of
head with annular scales about a line in
breadth and with the small pieces between y^m
from each side proceeded 56 claws or feel a
line long and size of a hair so that it appeared
to be one of the Centipeds. Its head was about
2 lines in length, 2 eyes, 2 horns a forepro
made of 2 branches at a greater distance
at their ends than at their roots & a throat
between of two branches very evident to be seen.

It lived in an empty bottle 18 hours and then
being put into brandy lived 2 or 3 hours more
Mr Malleot relates a case like this in Hist.
1733 An officer fell for 3 years in the lower
part of the forehead towards the left side and
near

Near the root of the nose a sharp pain & now 281.
violent at one time than another extending towards
the left eye and that sometimes to such a degree
as to make him afraid of losing his eye. he had
at the same time a buzzing noise in his ears
for w^h he had some oil of almonds poured into his
ear at bed time lying on the opposite side & some
time after. two days after this he found in his
left nostril a great itching and was seized wth
a great desire to sneeze and when he blew his
nose he was sensible of something moving
in it w^h he could not bring away but by pull-
ing it with his finger it was a worm w^h
immediately ran swiftly along his hand tho'
it was covered with slime mixed with powder
of Tobacco where it lived five or six days.
All the symptoms ceased after the insect
came away it was a centiped and of 12 species
of the Scolopendra it resembled the one depicted
by Dr. Linné but was only 6 lines long
whereas the other was 6 inches. the large
one had 112 feet the other only 100. Dr
Mallot seems to believe that if oil poured
in

282. in at the Ear was the reason why it came away
but as I think all the reasoning he has about
it is very idle I shall not trouble you about
it.

These two diseases Inflammation and
Insects in the frontal Sinus's have some
Symptoms common to both viz: a sharp pain
in the place but the former has fever attending
it, and must terminate in a few days the
other is without fever and may continue
long. In the Inflammation the common
Antiphlogistic Method is to be used as in o^r
Topical Inflamations and probably if warm
Steam of External fumes and poultices
with the Steam of hot water breathed thro'
the Nose may give relief we can have little
or no good Effect when an Animal is lodged
in the Sinus's in w^h latter case I think the
precaution w^h Mr. Lettice gives is a good
one, that is by letting Blood and using
gentle Cooling Physic and low Diet to prevent
the Inflamoration w^h the Irritation given
by the Animal might occasion. I also join
" with

with Mr Lillie that oil drawn up the nose 203.
while of patient's head is reversed so as to give
the oil a chance of entering and so suffocating
the insects might probably kill if animal
after w^{ch} it would putrefy and come away in pieces
or dissolved without any great inconvenience
as Mr Mallett apprehends tho' Tobacco does
not kill these insects and there is little probabi-
lity that powder of Tobacco passing into the
sinus is being concealed and winding yet the
Smoke of Tobacco is known to destroy most
insects and therefore would be reasonable to
make if patient accustomed himself long
of tobacco till he could bear the drawing of fre-
quently while it is thick and strong into of
nose at the same time that it might cause y^m
strong sneezing w^{ch} w^{ld} get of insects in of
historys I have mentioned have been brought
away a complete cure might be made by
it nor should I oppose pouring oil of Ol-
mond into of Ear of the same w^{ch} Mr
Mallett thinks cured the man whose case
he relates. The Method is innocent
tho'

284 tho' I don't understand how it can have
any Effect upon these Infels.

89. The knowledge of the Course & whether
it is Vein or Artery that passes thro' this hole
an obstinate hemorrhage may be caused
by cutting a very nearly hole for it is a vein
it communicates with it Longitudinal Sinus
we may furnish blood as long as it surface
is sunk within the surface of the bone is open
and if it is an Artery it both communicates wth
the largest lateral Artery and Internal Carotid
from it anastomosing Canals of w^{ch} blood may
flow to this one to have a Motion retrograde what
it has naturally and we may occasion an hemor-
rhage to us rather bleeding nor prepared can be
applied to stop and where Escharotics & styptics
can't have their full Effect.

I remember to have seen a Man who in his
drunken days had fallen down stairs & hit the
part of his head w^{ch} bled so violently & obstinately
that 4 or 5 of our best Surgeons could not stop
any considerable while till the Man became
so faint that he lay a considerable time without
Sense or Motion after this there was no more
bleeding

Bleeding and he returned. I saw if Man a few 205.
Years ago, he shewed me the scars on his head when
there was no oyr Expeel but what might have
been easily stopp'd from bleeding. Mytties wth prepoun
continued long upon if parts are what I would
try in such a case, if this had not effect I
would ~~try~~ push the point of a red hot iron into
the hole, you may sure I would take care to have
the iron of a conical figure so that it would not
pass thro' the skull and hurt if Internal part
and that I would not keep it so long as to scar
the bone so much as to affect if Dura Mater
91. The Bregma is the first if you are not
to expect in all even Natural Births that it is
precisely the part that is to be felt when
the Internal os Uteri opens only so much
as to let a finger pass thro' it. Tho' if Birth
may proceed naturally through if that point
of the Child's head immediately within the
Orific of the womb is any part of if Sagittal Sui-
ture from the middle of if so frontus long occipital
Bone when the head is felt by if Dilatation of
the os Uteri the Bregma is always within reach
of

286. of a finger.

It is stretched of which a child is alive all the vessels of the Brain are distended wth liquor & therefore it occupies a greater space to fill of skull completely whereas when vessels collapse after death the volume of its contents of skull is so much diminished that if ligamentous part which connects the bones is not stretched and so cruet be diminished.

Pulsation & when there is a yielding cranium and the pressure of atmosphere has effect in resisting the propelling force of the part & of Expansion of blood there is an alternate Dilatation & Constriction of vessels wth may be felt wherever the cranium is not flexible as at of Bregma but whenever of ossification is so complete as to leave no flexible space where of atmosphere can have any effect upon of Encephalon there can be no such Dilatation and Constriction of the vessels or no alternate rising or subsiding of of Brain as I shall endeavour to prove when I demonstrate of vessels of of Body to you.

If either no blood is drawn into of Brain as after death or if it is pushed wth too small a force while

a Child is weak the pulsation cannot be felt 28.7.
but seeing the pulsation there is owing to weakness
we are not to conclude from this single circumstance
of want of pulsation in if Poregma that if Child is
dead & opposite Liberty to open its head or do any
violent thing to its body in order to make if delivery
of the Mother expedient or easier. The reasoning of
pulling a Child to death is not to be trusted to such
an Equivocal sign; we ought to examine & all
other Circumstances by which we may be able to
determine if state of a Child whether it is alive
or dead; we ought to examine whether there
is any pulse in its Oravel string, temples or wrist
whether its faces are coming away, whether
there is a fetor as of rotten flesh or of water, whe:
ther the teguments of the head are very soft &
corrupted. If there is no pulse, if there are faces
seen if there is a stink, if the teguments tear
with very little force, if I say all these Circum:
stances concur, especially if we are sensible
of the fetor and corrupted tenderness of the Child
the body may be used with any freedom that
can assist the Accouchment to delivery of woman
soon but the want of a pulse alone is not to be
trusted

288 trusts to four reasons @ mentioned and even
the force may be squeezed out of a Child with
hard labour. There is one most unhappy
situation w^{ch} an Accoucher may be in then
may be no certain sign of if Child's being dead
and at if sometime if Mother's life is in all pro-
bability lost if the Child is not made less bulky
by opening some of the largest cavities of if Body
which would certainly kill it; this is a terrible
Dilemma, but if if Mother must absolutely lose
her life if violence is not done to if Child if pre-
ference in justice is to be given to if Mother
and the Child must be sacrificed to her safety
but certainly no Man would be if performer
of this sacrifice unless he tried every method
to avoid it by bringing away the Child entire.

Unopened in adults & I never saw it but
 Mr. Kingman averred he saw it often.

92. And Physicians of this opinion
of physicians I talked formerly when speaking
of the use of Sutures.

What was of Bregman Infants was believed to be of part of any where great ^{to be} screw ^{on} wagon. pedes by Medunnes.

93. Sound being multiplied & apply here
what was said on the frontal sinus's. — 289.

97. And we may once for all & There are
no parts of if body in w^{ch} there is a greater variety
than in if Veins their being seldom distributed
in if same way.

102. Which is stronger & so as not to counter-
balance if flexion but also to support if greater
part of if weight of the part of the head w^{ch} is
before if Condyles than of what is behind them.

103. Lodging of a sufficient Number of
Muscles & See Med: Eparg vol. 1. Art: 11 for an
account of if Muscles

111. But is inclined to one side or other &
In some it is much Bended that if Nostrils
to w^{ch} is Bended are almost shut up entirely
Uncautious people might take if for a cavity for
some Exercise in if Nose of w^{ch} I relate an Ex:
ample. G. M. of N. having accidentally found
he had not any Breathing thro' one of his Nostrils
asked the reason at one who he thought had
skill who after examining the Nostril answered
him he had a very large Polypus w^{ch} must
be

290. he extracted after sufficient preparation was
made of his body, we was to be done by a long course
of physow. the patient came here to town to have
my advice therein as he was heartily frightened.
On looking into of Nostril I saw something like
a Polypus but upon touching I was surprized
to feel there was a bony mass & made me put
my finger into of other Nostril and there found
as great a concavity as there was appearance of
a Tumor on of Straitned Nostril and of Septum
Narium as thin as skin for ordinary; I domped
him in high spirits assuring him that there
was no dyr disease than an uncommon bending
of the partition of the Nostrils w^{ch} never would
give him brow trouble than it had then, and
might perhaps be made thin, by pressing wth
his finger sometimes.

The cause of this curvature is probably owing
to of Septum Narium growing further than
the point of of Nose rises forwards.

114. Ozena & from Oza. Oleo, is any stinking
putrid ulcer of of Nose concerning w^{ch} Forestus
Lib: 13. Obser: 4. D. Riverius pro. lib: 4. Cap.
1. Aldan. Cent. 2. Obser: 22. Barbell's Chyrurg.

pt. 2. Lib. 2. Cap. 7. Sec. The Membrane of the Nose 291.
is thin but has a great flow of liquor to it, for if
constant secretion of Mucum was necessary
and as there is air perpetually passing thro'
it the vessels are thus exposed to all the vicissitudes
of heat and Cold, dryness and Mucum of
Atmosphere has and all the same time must bear
all the Impressions of the various Substances carried
to it along wth Air or any other ways put into it
w^{ch} not only act by their Mechanical effects
on the sides or surfaces of the vessels but may
likewise affect it by the Irritation they make
upon the very sensible and numerous Nerves
w^{ch} serve this part. It is no wonder that many
Disorders happen here as obstructions, Inflam-
: mation and ulcer when once an Ulcer is formed
the Membrane is soon destroyed and if Bone
attacked, The corruption of bones is generally
known to cause a fetid smell, the topical ap-
plications to an ulcer here ought to be such as
can't cause a strong Irritation w^{ch} is liable
not only to shake the whole body by its convulsive
action of sneezing but an increase of Inflammation
hinders it from healing and rather makes it spread
therefore the Surgeons who employ acid Meds.
hurt the patient. The advantage w^{ch} they propose
viz.

29th viz. a plentiful discharge of purulent Matter
is far from being Beneficial for as if the inner Lania
that comes from it has a dependent passage
and is always running off and the thicker part
that is glutinous enough to adhere to it & so contra-
ry to its own gravity is a Better Application for
a Cure than any we can apply and protects
the parts from ill effects of if our way
would be drying, creeping, Inflaming & corrupt-
ing the surface of the Ulcer; Infusion of Lin-
seed with a small proportion of Digestives or
any such mild liquors ingested; Vinegar or a few
drops of an Acid Sp. may be added when the odor
is great.

Violent Surries, Lues Venerea & These
are the diseases which cause the most general
Carotymia or depravation of the liquors of
the body and in consequence of worst kind
of Ozona may be formed. In these the Cartilage
& Septum of the Nose are frequently eroded,
so that either the lower part of the Nose is lost
altogether or being unsupported falls down.
If the Ulcer attacks the Osplanum the Mat-
ter opens a passage into the Orbit to destroy the
parts

parts there, if it opens into a Cerebriform 293.
plate of the Ethmoid bone it becomes dangerous
& if Brain was supported by it must fall down
and if Death of the patient ensue. In these diseases
it is in vain to expect a Cure from topical
Applications, the whole habit must be cor-
rected by proper internal Meds. I hope you
don't understand me as if I meant that these
2 Disorders the Scurvy and Lues Venerea
were if only causes of a violent Azonia. By
what I said when I came to talk of this disease
its evident that a great variety of causes may
occasion it here as those who are versant
in practice see often.

There is not a more frequent disease among
horses than a running of matter from the
nostrils; when of matter is white and without
a putrid smell the farriers don't despair
of making a cure, but if there is a great discharge
of a quantity of Brown or black coloured
stuff with a strong stinking smell they then
call it the Nostril Fungus or Mourning of
the Nose believing it to be a gangrene of
the Medulla Spinalis and advise to shoot
the horse thro' the head.

294 The situation of the nasal Lamellæ &
a Blow upon the ~~nostril~~^{may} drive the nasal lamellæ
upon the cribriform plate with such force as may
break the latter part. In consequence of which
the irritation of nerves we pass thro' the holes of
that bone may cause convulsions or may raise
an Inflammation on the Membranes of Brain
as well as the nose, or if this sieve like plate was
driven inwards the brain might suffer so much
as to cause death in a short time.

Tho I read of unexpected bad consequences
from a Blow on the nose yet I have not met
with any dissections where if fracture of the
Ethmoid plate was observable, but as it is a very
possible case I thought it right to mention it
that others may be put upon enquiring into
the cause of unexpected disorders from a blow
on the nose and that you may be warned not to
treat it always as a trifle. The curvature of
the septum may often prevent such bad
Symptoms from a blow on the nose as it will
break easily at its Perforated part and hinder
the

the pressure on to have its full effect on the Cranium
 from plate Whereas had the Basal Lamella
 been altogether perpendicular it would have re-
 sisted much more and therefore the Base on
 which it stands would have suffered much more.

125. of great use towards understanding it is
 of so great use that without an accurate examina-
 tion of the skulls its almost impossible to have
 a right Idea of the Encephalon the parts of
 it are so soft that in bringing y^m into view their
 situation and exact Dimensions are unavoidably
 changed from what they are naturally. On this
 account I shall now examine the figure & capacity
 of the Cranium with the several parts of y^e
 Membranes, Sinus's, parts of the brain, nerves
 Blood vessels, & that are to be seen upon it And
 this I shall do in the same order as in the
 several parts of the Encephalon are demoni-
 strated in the Dissection of the recent Subject
 and shall afterwards do the like with the oyer
 parts of the skeleton here mentioned.

129. By y^e contrivance of when the force is directly
 apply

296. Applied to the fore part, their arched or vaulted
form then breaks them out of their Base
is hindered to grow & is done by of Edge then
at the lower part being placed within the Opa Max-
illaria, when the force is applied to either side
it is resisted by their edge being laid upon the
outside of the Opa Maxillaria. this form and
connection of the Bones of the Nose save us greatly
from the dangerous fractures I mentioned
formerly when talking of the Nasal Lamellæ
of the Os Ethmoides.

131. Forolula Lacrymalis & see Med: & Phys
vol. 3. Art: 13. In performing the operation for
the Forolula Lacrymalis a rash operator may
do much mischief especially if he is not well
acquainted with the anatomy of the parts, the bone
to be perforated by the Trocar is the os unguis
whose outer surface is divided into two parts
by a ridge running vertically, that part fur-
ther from the nose forms a Bit of the bone
for the eye and is by no means to be touched
the eye part is a deep fossa full of small holes
when

When the Larynx was & Duodenum
lodged thro' this we were exceedingly thin the
perforation is to be made and so little force is
necessary that if weight of instrument
or very little blow will push it thro'; Some
Surgeons think that all of this is placed upon
the Os unguis and therefore push ~~it~~
perforator thro' any part of bottom of
Sac by this mistake I have often seen the
operation performed when of greatest force
was made use of and all of strength the
Surgeon had would scarcely do but per-
haps after a good deal of Boring & Straining
the Trocar went in a great way along
push, the case was thus the point of the
Trocar was first fixed upon a part of
the thick strong Maxillary Bone which
would require an immense deal of force
to pierce but by working it up & down
it at last came upon the tendon of the Os
unguis thro' w^{ch} violent force would
push it a great way in so much that
upon dissecting Bodies upon w^{ch} operation
had been performed by a Master of mine I found

290. the Cellula Ethmoides of a spongy septum
transversum of Nasae Lamellae pierced thro' &
the Bones of the opposite sides of Nose hurt.

It is a very easy Matter to find direction when
to pass the Instrument for After the Saw is laid
Open feel along with the point of a probe till
you meet with a ridge of the os unguis
where it will stop and as this ridge bounds
the Irregular foramen must be a very good
direction where to pierce then flows a
little blood from the Nostrils tho' often you
cannot pass a probe up by them.

I performed the operation upon a Soldier in
the Infirmary here a considerable quantity
of blood flowed out but I could not put up a
very flexible leaden probe by of Nostrils the
reason of ~~which~~ was that I had only passed of
Trocar thro' the foramen of Ethmoid Cells
However as they all communicate I
would not plague him with piercing again
and he soon grew well and was always in
proportion to of Instrument & force that
you use that it pierces grow or less deep.

In performing of operation of fistula

Protuta Lacrymalis of Membranum connec^{ta} 299.
the eyelids to edge of the Orbis ought not to
be cut or pierced other ways the Matter of it
Sore or tears may get into it & fall within of
Orbis the w^o form above & as w^e would be def:
ficult to cure

A large train of Bad Symptoms & what
I said lately of the Ozena may let you know
what Symptoms I hunt at.

136. Tendon or ligament. There is a
dispute about this whether it is a part
of the Orbicular Muscle or a separate
Body to which if Muscle adheres its con-
nection is not so strong nor if course of
its fibres the same as by tendons have
with their Muscles but there is cohesion
enough for to hinder it from receding from
the Nose when it is cut as it generally
is in the operation for Protuta Lacryma:
As the deformity of Inner Canthus of
the Eyelids being drawn outwards w^e some
are afraid of does not happen for part of the
Muscle

300. Muscle still adheres to jaw of this ligament that is fastened to of Maxillary Bone and when the ligaments unite they become firm enough in their texture to perform their office.

137. Make a communication & which may assist in making the great sympathy between the Organs of Tasting & Smelling so far as the roof of the Mouth contributes to tastings

Steno's duct. In the skeleton there are holes here but whether there is any passage in a recent subject is disputed among Anatomists. Hewster's Compend: Anat. & note 59 denies that it can be demonstrated in a recent subject whereas Hulm: Tab: Anat: ad Tabulam 11 asserts that he always found in a variety of Animals a double orifice of it in the palate which appears by the liquor coming out of it when the palate is strongly pressed forwards towards the denses Inusores and by putting a hog's Bristle into any of the orifices and first pushing it perpendicularly upwards and then backward it will easily penetrate into

into of Nose when he affirms of ourpus are 301.
More easily seen than in of palate he as-
sures us he traced y^e in of Cornway in a
Boy of 2 years of age. he acknowledges of
papillae that are so remarkable in Forules
at the palate are in hominibus non adeo
manifesta; I fancy thro' my own biasing
y^e they are wisdom to be seen in of human
Body.

Unjustly called Antrum Highmorianum
Because all Anatomists have described
and painted the ex^{tr}aculus long before Natha:
:nael Highmores disquisition came out w^{ch}
was printed 1651. The Antrum Highmor:
is liable to a great many disorders, it is
lined wth a strong firm Membrane in com:
mon with of Nose & is furnished wth
large vessels so large that a successful In:
jection will fill y^e while those of the
Sinus frontalis & Sphenoidalis remain
empty & colourless w^{ch} separate a liquor
into it as the Antra communicate wth the
Nose by a Canal at their upper part they
muse

302. Must be full of this liquor before it can
run into of Nose or the head must be held
down so as to bring the Communicating
Canal lower most, from this situation
especially if there is any broad Rent or in
the fluids or if the Canal to of Nose be obstructed
the secreted liquor will be retained of consequence
the thinner part will be taken up by the ab-
sorbent vessels while of red is inspissated
and the secretory vessels obstructed, hence
Inflammation and all its consequences, hence
loose churrs are formed and I myself have
seen an antrum distended to 4 times of my
fist by such a churru, hence Polyp
are formed hence we often shoot out thro' of
passage to of Nose and obstruct it, if they
are removed out of the Nostril they soon
spring up again from the body of An-
trum.

In a beginning Inflammation in these
Membranes of the Sinus's of patient can
not distinguish it from a toothach nor are
they amplified by us even a physician
can. the only ones he has to trust are the
following

following 1. We may examine whether there
 are any lacerous teeth or any we have changed
 their colour if he finds any such he may
 suspect the disorder is only in of teeth tho
 this is still extremely precarious.

2. If the cheek and gums are swelled it is
 probably in the sinews. In the progress of
 the disease if upon hanging down of head
 matter run out at of nose we may then
 certainly conclude where the mischief is.
 Dr Hephnom was of first who gave any
 hint for using an Absorber and that
 entirely by accident. A Lady had got one
 of the dentes molares drawn we had broke
 a hole thro' the antrum as if plates which
 separately make but then, she thro' diversion
 was putting up a feather into the socket when
 to her great surprise she found it go up its
 whole length and as she believed into her
 brain, she immediately sent for Hephnom
 who was obliged to bring her a skull & show
 her how it happened before she was satisfied.
 he himself makes no use of this accident towards
 curing this disorder but it certainly furnishes
 me

304. In Cooper's of this fortus operation
we is whenever we know that a quan-
tity of pus is lodged in either of if Antrum
to draw if 2^d dens Molaru then to perforate
the thin bony plate w^{ch} forms if underside of
the Antrum w^{ch} a Shoemaker's awl and so
to Evacuate if pus & afterwards by injecting
deurgent Med. to complet if Cure One of
his directions however I must guard you
ag^t. from my own experience, he advises
to draw the 2^d dens Molaru now this is so
far forwards that you can't pierce into if
Antrum thro' its socket. In a case of
this kind after I had taken out this tooth
I began to bore with a small gimlet and
bore so long that I thought I should have
pierced into if Orbit of if eye while the
Antrum was all on one side of if Instrument
I would if for always advise to draw if 3^d
dens Molaru. The 3. 4. & 5 would be still
more secure but then it would be difficult
to introduce if Instrument for piercing.
Now we know that pus is formed it is
extremely dangerous to delay if operan
as the Matter will certainly acquire a
great Degree of acrimony by being let stay
&

and must at last erode if tender bone
 is surrounded with it. Mr Cooper gives us an
 instance of this in a young gentleman whom
 he advised to this method but he neglected it
 for some time till matter appeared oozing
 out between 2 of the dentures molars when
 he agreed to submit to operation. Mr Cooper
 pulled out one of these teeth and if other
 came along with it they were both cari-
 :ous at their roots, the pus was discharged
 and the ordinary method of cure pursued
 but in 5 or 6 days the gentleman died.
 Mr Cooper was allowed to look into
 the head where he found if matter had eroded
 the upper and back part of the Antrum
 after that a part of the Sphenoid al
 Bone turned carious and a large abscess
 was formed in that part of the brain
 we lay upon the Caries of the Sphenoid
 Bone. Mr Cooper likewise tells us that
 by injecting Med. at such an artifi-
 cial perforation of the socket of the
 teeth he cured the Obsolete Otorrhea.
 The following case occurred to myself

306. A soldier was brought into of Infirmary
he with two ulcers on his face one near
the inner canthus of the eye and of other
upon of cheek of the left side. I easily
discovered these reached into of Sinus Maxi-
:llaris as I could put my probe a great
way in and turn round in every di-
rection: the Man gave a very distinct
Acct. how this happened from an Obstruc-
tion of of passage from of Antrum to
the Nostr^{um} and by of long confinement
of the pus without being evacuated
it eroded the bones and formed these
ulcers. I pulled out a tooth & with a
shoemaker's awl whose curvature
renders it a very proper instrument
pierced into of Sinus & so let out the
Matter. I then made an Injection by
the hole till it came out at of two
ulcers And the Man was very success^{fully}
cured tho' it took up a long time from
the

the Muschels having proceeded so great
a length but when Polypous concretions ^{307.}
or scirrhous tumors are formed in these
sinus's I must own I don't know how
they are to be cured.

139. May always Morsten & when
we are erect the frontal sinus's and
the Ethmoid cells Morsten & Membran
covering the upper part of it & now and
then the ears are poured upon the lower part
when the head is bended forwards the
Sphenoidal sinus's supply what is
not sent out in a sufficient quantity
from the frontals; When the head hangs
down the Maxillary sinus's empty
themselves and when we lie on one
side the upper Cerebric cavity & Maxil-
lary sinus's pouring liquor into it
tho' I mention these situations as
giving cause & give to it several liquors
yet it may be observed that if all
liquors will exomitate if situation
of

308. of the head be what it will for the flow
of the tears is constant depending on
the absorption at the puncta Lacrymalia
which is generally well performed in all
postures and that even the sinus's themselves
may be placed with if passages from
them uppermost yet they may swell
and then run out.

Are not the largest vessels I think
they are and we find a much greater
slime in the nose than in any of the vessels
that open into it; without this slime the
air would hurt the sensible Membrane in
rushing backwards and forwards in respiration
especially when it is fraught with any acid
particles and a certain quantity of Mucus
to entangle the odorous particles and keep
them long enough applied to the Membrane
to give a sufficient Impulse to the Nerves
to raise a distinct Idea of the objects
of smelling.

140. Ceteris paribus the most sensible &

I answer this in of Affirmative and prove it
May be greater pain w^{ch} acid Steams drawn 309
forcibly up the nose cause in the sinues is
than in of over itself large arteries and
Veins in the surface take up the space w^{ch}
is occupied by nerves. When if vessels are
smaller and sterner may hinder so quick
a sensation tho' it may cause a more durable
one and a more distinct perception.

151. Phenomena of smelling & there is
a great dullness in smelling when the
Mucus is in too great a quantity as in
catching cold the liquor then hinders the
Impression of odorous bodies & washing
them off from the Membrane so that they are
not smelled tho' at the same time the Memi-
branes are now sensible than before of
tangible objects; the like happens when
the Membrane is too dry or if we breathe
in dusty air. the sense of smelling is more
acute after blowing of nose when too much
mucus is collected there too great acuteness
in these organs when there is inflammation
likewise

31.0 Likewise in some measure prove this query.

Inflammation of which is attended with sharper pain than in less sensible parts and the pain is extended thro' all the sinuses that communicate with it now and sometimes to the Meninges or Membranes of the Brain from the continuity or contiguity of the parts.

Megrim is an acute pain extending to the forehead, nose, Eyes or Cheeks without fever. the forehead is of proper seat of it and by the pain and heat of the nose it appears to be in the frontal sinus rather than in the teguments of the forehead and as sudden Irritation of the parts that have a pain here is in the case of a Megrim frequently take away the pain, the Snuff being made of Hungary water or spirit of Cinnamon or of Cinnamon is a reasonable attempt for curing the same.

Polypus of Any Excrecent springing up in the nose whether it rises from the Ethmoid Maxillaris or has its origin in the proper

proper Membrane of if nose and of fever 311.
matter it is composed of gets if name of Polypus
from a supposition that I can't see sense
in viz. of its being several small distinct
tumours at first each having its own proper
root and afterwards growing together to a
large one, the giving this name to every tumor
here may lead practitioners into great blun-
ders as if matter with w^{ch} of Excrecences is
filled may vary extremely, one consists
of a cell filled with a glay sort of stuff
the oyr is of the scatomatous kind, with
these however you may use great freedom
in extracting y^m but if I should think
was to be followed in which here it
would soon degenerate into a Cancer and
in a word there is here the same variety
as in tumors or Excrecences from any
other part & of consequence they require a
different way of treatment.

It is not unreasonable to think the
Polypiforming grows frequently in the
nares

312. Thinner than in Sinus & in Maxillary Sinus is thinner of frontal & sphenoidal working to greater thickness & larger vessels of Membrane of former than of the latter.

141. Instead of an antrum & being none of C Sinus we open into if Nares are formed when a child is in if Womb may not their formation depend greatly on if Air pressing out of if Sides of the parts of if Nares we are weak & and descending if Womb to the size we if Womb in if Adults

145. Why the Eyes are affected & The Canes extending from if Palate plates along the Nasal at last attach to the Orbital plates very near where the Optic Nerve & other Nerves are placed and as they may be destroyed by if acid Matter proceeding from if Bones .

Palate suffers an Orylops & when the Matter of an Orylops or an ulcer of the internal Canthus of the eye seats

Eats thro' the ligamentous Membrane & con:
nects the Edge of the Membrane Orbit to of Eye
& naturally falls to of under part of the apex
of the Coagul Orbic when of Orbital process of
the Palate bones, and when on it is rendered
laxious the Lacus proceeds downwards into of
Bone to of part of it we form of Palate to side
it and the Membrane with it is covered.

Hoffman's history of such a case is of following
A woman of 50 years of age being subject to
catarrhus Defluxione had an ulcer not
far from the Lacunula Lacrymalis of of
right Eye the Matter of it made its way
into of nose and of Palate bone broke in
in sign pagore.

149. By the double Chindles is of It re:
ceives of thin plates of the Scaphoid & Ethmoid
into of furrows on the upper part of it and its
own little ridge is received between of Palate
& Maxillary Bones.

151. But then the jaw becomes of it is diffi:
cult to explain how the filling up of of sockets
in both jaws happens when of Teeth are
taken.

314. taken or fallen out.

If the sockets filled up gradually with bony matter from the bottom we gradually rising loosening and falling out of the teeth of old people would make one think to be of case but then the jaw ought to remain of the same breadth as before, but you see evidently in the jaw bone that it is not so for both the Maxillary bones out of which the teeth have fallen long before the person died are much narrower as if there had been no sockets there as we shall now evident in those who have lost 2 or 3 of their teeth for there you see the jaw bones much narrower than any where else. if the sides of the sockets bended inwards to fill up the sockets this would explain the phenomenon, but neither does this happen for when of repletion of the body is common I feel you see no such bending inwards there is only a net work of bone at the bottom of the sockets. the reason may possibly

315
probably better when the teeth are in they
are pressed into the substance of the jaw & con-
sequently whatever growth the jaw has must
be made when the jaw has no prepared that is
the sides of the sockets must be longer whenever
the substance of the sockets by age becomes so
very rigid that the prepared of the teeth cannot
have any impression, then there is an Equi-
librium between the Expanding force of the
sockets & the prepared of the teeth and both re-
main nearly in the same condition till the pres-
sure diminishing as people grow old the Ex-
tension of the bone in the bottom of the socket
prevails and the teeth are gradually raised
out of it; As soon as the teeth are away the
prepared is made on the edge of the sockets
and therefore makes the jaw flatter & thicker by
which the sockets are filled up and the jaws
become narrower and the prepared on the
tops of the sockets continuing they are
at last made so entirely flat that we
cannot see a vestige of the jaw nor even
of the spongy part of the bone of which they
are formed.

316 Hence we may know & after teeth
fall out of Gum approacheth so much nearer
the nose as of length of teeth in both jaws.
I mean not only if base of that we stands
out without of Gum but if roots also when
the sockets are made flat & solid & smooth,
by being long subjected to pressure after the
teeth are out.

Lips either fall in or Thus they will most
naturally do because the orbicular Muscles
of the lips draw y^m inwards when they want
teeth to support y^m. but if any person has
accustomed himself to y^e turning his lips
outwards or so as pains to turn y^m so when
the teeth fall out the lips will stand prominent
and it will always be increasing by y^e pressure
one each other. tis better to turn inwards than
outwards because Caries may happen from
the last.

152. When new teeth are protruded & this
confirms what I was arguing for as y^e cause
of y^e deletion of y^e sockets for this purpose
only of y^e middle internal part of y^e jaw edge
of y^e jaws causes again to rise up into sharp

153. Fractures of the lower jaw & In the fractures of all bones there is danger from wounding or tearing of blood vessels or nerves, w^h are distributed long & narrow and especially these bones where the blood vessels and nerves enter in a great trunk to be divided into small small branches within of cavity of bone but of lower jaw when fractured in a worse condition than any other, for first of vessels and nerves w^h enter these holes are not only so large to serve the ~~lower~~ jaw bone but also of teeth and teguments of of chin 2^dly these nerves & vessels don't lie immersed in a great quantity of fat as most of of other dullany vessels & nerves do to allow of stretching and hinder of from compression On the contrary these are placed in a bony groove so w^h they are connected by their branches going thro' holes only of substance of the bone when therefore of lower jaw is broken and especially if the ends go away from each other of nerves within its substance run a great risque of being pressed or torn from

310. from w^t violent pain, conuulsion & maybe
Expulsion And if blood vessels running of same
usque violent hemorrhages may ensue. the
replacing of broken Bones if best remedied w^t
the lesion of & cured but when there is a hemor-
rhage the Reduction does not stop it, nor if there
is not a part of the jaw bone taken away does
the Surgeon know how to stop it w^t no compres-
sing instrument. Ligature or Escharotic can well
be applied to if bleeding or flux of & vessels
Compression however may be tried at ^{upper} ~~some~~
side of if jaw to hinder the blood to entering
hole before it gets into if jaw.

There is however a very great happiness
that this bone is seldom broken except by
such causes as shattering of bone so as we have
a view of if parts that are hurt I mean it is
seldom broken but by Bullets w^t penetrate
its substance or break it into splinters.

Thick compact and hard & I don't think
there is any bone in if whole body so strong
as the lower jaw as if (thence) the compression
of the temporal bone does not resist hammers
hammers saws &c as this bone does at the

The chun, the outer surface of of teeth needs 319.

Crosses, saws rasps & fully more than of lower jaw but the teeth fly to pieces with of strokes of a hammer with the Base of of Chun does not do.

this strength of of Chun is a kind of provision to save us from any Bruises & fractures for this part would otherways suffer.

154. Tubercles covered with smooth Cartilage & Mr. Saun contended in Mem: de l'Acad: 1744 p: 429 that the substance covering the cavity and Tubercles of of Sem: foraminis is not a Cartilage but of Perosteum the same may be said of all of Cartilages covering ends of articulated Bones they have at least their Chondrium ^{is} continued wth the Perosteum. If it is of the nature of of Sub: stantia w^{ch} covers of Bone that makes it separate diffirently from its Perichondrium & at of same time leaves it so little substance that its Elasticity can scarce be observed w^{ch} makes him chuse to call it a Membrane Many know of of Cartilages at least commonly so called must change their Names tho' to say they have of Cartilaginous appearance for they have

320. have a shining pearl colour wth Membranes
and Ligaments want. Such reasons as I
have just now mentioned have occasioned
the same Gentleman to take away if name
of Cartilage from y^e Body that is interposed
between y^e Condyles and Temporal bones & to call
y^m Ligaments. I long ago in the General Booke
begged you how difficult it was to distinguish
between soft Cartilages and strong hard Liga-
ments and between y^e weakest kind of Ligaments
and Membranes. the rule I would observe to
retain all y^e old names where there is a general
Class of Bodies that have many of y^e same pro-
perties and serve the like uses tho' some of their
appearances mentioned in y^e Common De-
finition are wanting. In consequence of w^{ch}
I have kept y^e most common names of these
parts true.

Like y^m Ligaments of the joints by Lyn-
ghus &c See Faren ibid: 430.

155. When the foreteeth of y^e lower jaw of
this sort of Motion I had old mentioned par-
ticularly therefore Mr Faren has obliged us
by considering ~~it~~ in a ~~new~~ ^{different} way.

When the Mouth was opened & there I had
committed a mistake in all of former Editions
and in my Med: Essay, I had observed that when
the Condyles were advanced forwards when
opened the Mouth if Condyles went back
into their Cavities and therefore I concluded if
the Condyles were always in their Cavities when
the Mouth was opened unless violent Strain-
ing or Contraction of Muscles hindered it.
Mr Farther very justly observes that in
opening of Mouth if Condyles generally
start forwards on the Tubercles and that if
Axis of Motion of Lower jaw is then a
little further back. The Mechanism by
which comes to be of Center of Motion is
owing to Angles being sustained from mov-
ing backwards by Muscles fixed near to
them while External Pterygoid Muscles
pull it forwards by which the Motion of Angles
is very small besides what it would be
if the Center of Motion had been of Center
Ends of Condyles and therefore there is no
such stretching of the Muscles of Lower
jaw nor of the parts of Mouth & fauces nor such
danger

322. Danger of Angles bruising or piercing the
parts plaied between ^m and if ^m adorns proops
as there would have been had their motion
backwards & forwards been greater.

Luxating forwards & w^{ch} of only way
a Luxation happens here, Gaping, laughing
vomiting and ~~laughing~~ yawning and if only
causes from w^{ch} I saw luxations of the lower
jaw.

156. In the next & By attending to the motion
of your own or any peoples jaws when chewing
you'll better understand the direction of motions
w^{ch} I have just now described than you can
do by any words I can use.

By a then lastilage & Mem: of the parts
that this connection is made by of Perioste
and by w^{ch} we must mean to adopt Mr Du
Hamel's doctrine of w^{ch} I formerly gave you
an acc^t. For in fact this is a thick Car-
tilage tho' afterwards when the bone are
nearly ossified it becomes as thin as a
Membran^e.

158. Hence the sharp edges of the ages of the
men

323.

May as well be determined in people as in ^{men} ~~men~~
by ~~the~~ teeth. Old people have their teeth blunt at
their Edges and if Back teeth smooth & Enamel
thin; regard must however be had to people's
way of living for those who have employed their
teeth much in chewing or who had frequently
acid substances applied to their teeth will wear
them faster as cattle that feed on sand or salt
ground lose their mark of mouth sooner than
others.

For then the opposite & in fear of being
subject to toothache I pulled out my second
dentist of the right side of my under jaw
where you see a void who however then of
saw that the tooth of it had remained in
my jaw must have filled up. When I put my
jaws together you can scarce observe that void
the tooth opposite being longer than those of my
upper jaw now filling up the space between
between my first & 3 grinder.

No difficult solution of the setting of teeth
on edge by sour fruit is nearly of same denotation
as one who has soaked his finger in water or
sft. of wind wth some acids have been mixed
tho'

324: tho' a certain degree of Numbness with a
greater quickness of feeling, this seems at first
a downright contradiction but I dare say all
of you have felt it. you have not a right Idea
of these organs while in this State, you can't
distinguish plainly, what it is but it gives
pain as in drawing ones finger gently along
Velvet Most people feel something very
uneasy as well as chewing food we has
Sand mixed with it; very cold or hot bodies
applied to if teeth give uneasiness as well
as if skin.

Muscle considerably increased &
all of Mechanics allow that, but they are
not agreed what is of force gained by a wedge
whether as of height C. D. of the wedge is to
its Base A. B. or half
the Base A. C. the latter
opinion is now most ge-
nerally Embraced but there
is so much question in
all of Mechanics em-
ployed for ascertaining
truth that if Capt does not answer our

enough to destroy Theory.

325.

Why are Children Subject to Salivation?

The answer to this is of very same as to the other why a fever is raised from an Inflammation? Why from overstretching the small nervous fibres we go to compose the vessels that are obstructed. In the same way a fever is raised here from the teeth pushing up and piercing the reflected Membrane of the Gums / we serve for a Periosteum within the sockets / and of tender substance of the Gums themselves. When the Irritation on the Nerves is but slight the Effect is only a kind of Salivation either from a Commotion or consent of the Nerves of the Teeth or Salivary Glands or from continued Chewing Biting or working wth they usually make with the Teeth by w^{ch} the Saliva is squeezed out.

But if the Nerves are overstretch'd so as to be in danger of breaking then Convulsions violent fever Inflammation coming purging &c and the consequences.

326. The disease easily goes into our gums, here is
a fever and Inflammation caused as in any other
: now therefore the Antiphlogistic Method is to be used
bleeding by all means with cooling purges &
Diet may when from experience the Children of
any family are found to get their teeth wth difficulty
about of time they are expected these things should
be premised to prevent bad consequences and
this may be by taking a little Rhubarb every
now and then.

From a profusion of Saliva into the Mouth
we may take it from Nature to give them
some emollient relaxing decoction as of Al-
thea or Liquorish roots to loosen the Gums
and relax the Gums that they may give you
less pain.

We may observe too how greedily they put
every thing to their Mouth and before we ought
to indicate use of the Coral Stick or some such
smooth hard substance as by sign of pain seems
to be alleviated and if protrusion of Teeth
appears. But when the Children are very young
it is a very easy thing to imitate all this

it anticipates a little the work of nature 327
by cutting of tender gums with a scalpell
down to of teeth off by this means have
a passage made for ~~the~~ the relax-
ing with of Decoction of warm milk may
serve to take of the Tension from the Nerve.

2. 2. The full teeth are most exposed to
pressure as the fore teeth and should according
to what was said of operation in general
in p. First become firm and turn hard
but tho' if teeth were formed & advanced at
the same time those that are sharper & have
the greater aperture from pressure must
make their way sooner thro' and yf for
the order mentioned in the text is what if teeth
must follow in coming out there are some-
times Exceptions to this but you know there
is scarce any rule without Exceptions.

2. 3. Why Children do shed? The most
common time for this is from 5 to 9 years old
as if coming out of the teeth is from 6 to 10
months as you see here I take great latitude
without confining myself to of Septenary
Number the Doctrine of Numbers was first
introduced into Philosophy if profession of we
made

328. Made of Believers of it fond for catching
at every Observation of fact that confirms
their favourite hypothesis or to ^{suppress or} explain
away every fact that contradicted it.

The plain reason for Children shedding their
first teeth is of purpose we if I may so make
as they advance in growth by they squeeze
what ever is near the edge of of gum; & so make
it loose and at last push it out of their voi-
:kets or if uneasiness of a loose tooth makes
the children or some of their friends pull it
away a spoon as they will feed to a small
force, if if Internal sett is long a grow-
:ing, the first sett is long in being pushed
& c. Contra.

2. 4. Wherefore have these temporaries &
the Basis of the teeth are first formed from
the roots are gradually extended.

The temporaries are not long enough
in if jaws for if formation of if roots till they
are pushed out by their successors & if fore
have commonly short or no roots.

2. 5. Why have these first & The internal
sett often a long in growing or if they are

considerably to a side of of temporane:
ous teeth these have both time & space
for of growing of roots.

And on this way may depend Tauchard's
Observat: Chyrurg: Dent: p. 7. of of dentes
delets: or Temporaneous teeth having roots
when they are pulled but none when
they are shed.

2. C. Why do these roots & If the
internal teeth pass wth of Basis pass
of temporaneous ones out of of sockets
as is commonly done but if they pass
the roots to a side and for wth of
bone & gum. I have often seen children
kept long in pain wth ulcers in their lips
or cheek from such roots as have never
been taken whole of or were not thought
to be cause of of trouble. the ulcers cure
as soon as such teeth were taken out we
is easily done after cutting thro' of remainder
of

330 of the Gum that covered them.

2. 7. When we come Butter & from of two Layers of some death or being placed too much to wide of each other and it spaw enough in if far to contain both in we only if not Both of a p. a row in of orderly row with if red of if teeth & has if name of Butter or Buck teeth for what reason the first one we is if English name is given I don't know; but our name of Buck teeth is taken from a fancy that goats teeth are placed so irregularly.

The French name is un Dents hors du rang. Teeth out of their rank is expressive of their situation. These teeth often prove inconvenient if they stand out ward for they hurt the lip or cheek, if inwards they hurt if tongue & therefore Surgeons are often ordered to draw them

In doing this there is now precaution
necessary than in pulling out teeth
that are single because of danger
of loosening or taking out of other
teeth is before or behind if better and.

Q. O. How do these teeth & sometimes
a tooth grows out of range of other
teeth by there not being space enough
between the 2 contiguous teeth for by
its happening to use in a different
direction from the rest when there is
space for it, it may gradually be
brought into its row by pressing
it frequently towards its place you
would desire to be if the patient is
young and careful to press as you
direct.

When there is not space for lodging
such an irregular tooth it can never
be

39. We brought him into range with of rest
unless I paid to left front and that I
have done by taking out a rotten tooth
that was of 2^d behind when of pres-
sure of 1st next tooth receded and of
other came into its rank so that from
upon seeing the set of teeth I can think
any was wrong placed.

L. 9. How have some people?
Blasius mentions several examples
from authors and I saw lately a docto-
row of teeth in a gentleman which
must have been owing to 1st two sets
of teeth being placed so far aside of
each other that both could grow to
their full size without pressing each
other out of their place.

L. 10. How do the teeth of old people?

Because as the parts of jaw 333,
are always Endeavouring to extend
themselves tho' if pressure of teeth
is sufficient to oppose the rising of
the Bottom of Socket while it is
capable of yielding and while the
Muscles that draw jaw together
are vigorous & in old age when
the bony fibres will not yield
and the Muscles w^h press teeth
together are weak the growing
force of the bony fibres prevail &
the bottom of the socket gradually
rises and pushes teeth before
y^m perhaps too if teeth being deprived
of their vessels and nerves w^h enter
at their points according to y^e observation
I made after De la Hien may cause
the

the Collection of y^e Teeth of y^e Teeth
to y^e Sockets helep.

L. 11. When a user the setto of Hoff:
man in the plawid has collected
several histories of old people get-
ting new setto of teeth. I have been
told by a gentleman who was very
well acquainted wth Mr Beveridge
of Ladderhall near Faulkland in
Fife that at 105 years of age he
got a new set of teeth and mar-
ried a young wife who had 7 small
children to him, he used to ride
to all the market places till he
was 110 when by attempting to ride
a young unbroken horse he was
thrown to y^e ground and broke his
thigh bone. tho' y^e fracture healed
yet

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y^e who was afterward so infirm^d
that he could only sit before his
door and enquire the news of y^e
Marble but was not able to
travel to any of y^m. how these
Setts can live so late can only be
conjectured: possibly such people
have not had their first Setts pulled
out y^e 2^d not increasing till late
of life or they may have 3^d Stamina
of teeth of w^{ch} y^e 3^d most internal
must have remained lurking
long; that some people may have
3^d I believe because I have seen
two grinders w^{ch} I was assured
were the 2^d teeth grown there
come away with their sockets
in the small pox for w^{ch} I gave
my

336. My opinion that if young lady
would never have snow there but
I was mistaken for some years
I saw that part with some teeth
in it and if full set of 32 were all
sound.

Q. 12. Why are not if gums of
Because the sockets fill up and if
surface of if jaw becomes smooth
and by using if gums they turn
very hard like iron or plates
Such toothless people can have
nothing that is tough but I have
seen a man who had no teeth
in his head break with his gums
as many of the hard sea beetles
as he could put between his
jaws.

Q. 13. Why are if teeth insensible?

What I said formerly concerning § 337.
~~Impopibility~~ Insensibility of Bones may
Apply now strongly here. the rigid or
:tical substance can't be affected by cutting rasp:
:ing rasping substances so as to give sensation
and therefore Surgeons frequently file away
the surface of teeth when they are spotted
black, or brown and then a disposition
to rotteness then or when there is any sharp
:pike standing out to hurt of Tongue
Cheek or Lips. Sometimes they file away
the sides of teeth when they press upon each
other because it thro' such preparations in
danger of bringing Caries upon y^m. When
teeth are filing Surgeons generally keep
a finger upon tooth to w^{ch} file is applied
to stop y^e tremor and consequently the
uneasiness w^{ch} repeated vibrations from y^e
teeth of y^e file might give to y^e cortical substance
by w^{ch} y^e internal parts would suffer.
2. The Sensible of heat or Cold & Whether
heat & Cold are positive or sensible qualities

338. I know not but it is certain that all bodies
are pervaded with ym and yffowtho' yf
Outer Surface were entirely insensible of
ym yffowtho' can transom ym to yf internal
Sensible parts. the Cortex & Enamel seem to
be a Medium by w^h heat and cold commu:
:icated to yf pulpy Substance of yf Nerve
within itself is insensible. the precise
Method in w^h acids operate so as to produce
the Effusive calc setting of Teeth on Edge I can
pretend to determine but we may feel yf
cutaneous nerve affected in yf same way
by rubbing a strong acid as sp^l of vitriol
upon the skin.

There arises a sort of Numbness and
an uneasy sensation upon touching any
thing acid as I have often felt after handling
any wet preparations w^h are kept in sp^l
of wine w^h a little sp^l of vitriol mixed w^h it.

2. 15 Set on Edge by acids & This pheno:
menon is difficultly accounted for it may
be either owing to yf sensible parts entering
into

into Composition of ϕ Cortex being capable 339
of being affected by ϕ Very small particles
of acid Liquors tho' ϕ Object of touch does
not affect y^m or rather ϕ Cortex may allow
such particles to pass. so as to leave an effect
on ϕ Nerves without.

The uneasy sensation we feel upon eating
Anything in w^{ch} there is acid or gritty particles
is owing to the vibratory Motion into w^{ch} they
put the teeth. Very analogous to this is ϕ
Phenomenon of ϕ wonderful fish Torpedo
w^{ch} Entirely benumbs ϕ whole Body, by
only touching w^{ch} ϕ point of ϕ finger
Nay ϕ effect is nearly ϕ same tho' you but
touch it wth a long stick: this was long
believed to be owing to a very subtle poison
in this fish, but our Member of
 ϕ Acad: des Sciences has discovered that
it rises from ϕ sudden quick vibrations
given to ϕ Nerves by ϕ exceeding quick con-
traction of a strong Muscle w^{ch} lies upon
the back of ϕ fish.

340. L. 16. When gritty or sandy substances &
What was said of filing teeth is nearly of same
viz. Exciting numerous Vibrations on ^{of} side
of ^{of} teeth. It is true in ^{of} solution of ^{of} Phenome-
na I have attempted to explain how we have
such sensation by application of different ob-
jects, or of different manner of applying the
same object. I know nothing of ^{of} matter
how different objects should excite different
Ideas or how there should be any mutual
affection ^{of} ^{of} body by the mind; I can carry this no
further than Experience teaches me, yet such
causes are observed to produce this or ^{of} other
Effect without being able to determine the
precise Modus operandi of ^{of} cause to produce
its Effect.

L. 15. What is the reason & Bartholine
tells us that a Quinal Padua having caused
a long tooth to be filed, was immediately seized
with Convulsions & Epilepsy. In ^{of} part of
the tooth that was filed Nerv. Vestigium
apparebat; this explains it evidently to
what if violent symptoms were arising. Our
pulpy Nerves can bear no such treatment
as

As this one must have got from Instrument 341.
we cut of tooth without creating great pain
and disorder in body. I have seen people
almost distracted and convulsed with a piece
of Bread or any other Substance pressed into a
hollow of of tooth.

Q. 16. What parts are affected in the
toothach? The toothach may be generated
by an External or Internal cause. Young
persons have made themselves subject to it
by breaking hard Stones wth their teeth by w^{ch}
they break a piece of a sound tooth; If so much
was broke off as laid the nerve within of tooth
bar, the toothach is soon felt; if there was
a thin covering left upon of nerve that it
took some time before it wore away & till then
only the pain was felt. The internal causes
of of toothach are Acute or Chronic. In the
Acute ~~case~~ the patient is seized wth a very sharp
pain of a tooth w^{ch} is apparently sound and so
became feverish in a day or two. there is a
beating fullness and other suppurating symp:
toms in of tooth; then there is a weight & gnawing
in of a little after some pressure makes of tooth
break

342. break and it is found all hollow within.

In the chronic cases there is Rheum
as the patients call it in their face, gums & teeth
in some particular teeth there is a gnawing
uneasiness. If an accident of chewing some
hard thing breaks the tooth, it becomes brown
and black and a hole appears within it is
a large cavity surrounded by a thin shell
we crumble away, leaving of stumps of
root in socket. When a tooth is broken by
an external cause there is no remedy but
taking care to put nothing acid into the
mouth, & running to chew with a broken
tooth & such other precautions may save a
thin plate long. When a tooth is attacked
internally, wth Inflammation &c. & the
other Methods usually employed should be
suddenly made use of to prevent suppuration
but this is generally neglected, thinking it too
much for a disease that does not en-
danger life many a tooth and painful hour
might be saved by it. If a suppuration
has succeeded wth Inflammation the tooth is lost
but tho' the tooth breaks there may be preserved
a

a little pain in it if the whole bundle of nerves 343.
and vessels have not been melted down w^{as} is seen
the case.

Purgatives, draughts, Issues & such others may
sometimes be used at the beginning of a chronic
toothache & save the teeth from becoming carious.

What gives rise to pain in all these cases is of Irrita-
tion of the Nerve within the tooth. we may see a
ful of a toothache brought on by a bit of chewed
bread going into the hollow of a tooth or a piece
tooth or pushing pulp into a hole formed in
the tooth sometimes cause most terrible
symptoms.

When a tooth is once rendered carious
it generally subjects the person to a toothache
as long as it remains in the head. The Irrita-
tion of the Nerve then raises pain, ulcers in the
neighbouring parts. The corruption in such a
tooth gives off breath a foetid smell and it varies
that smells from that corruption of other teeth on we
must a rotten tooth ought not to be kept.

Q. 17. Why are the Dentes Molares of the upper
have their thinnest weakest border only ^{we} _{we}

344 with a large cavity within it and therefore are
easier broken and have more vessels in them
and consequently a greater chance for obstructions
of all kinds and y^e for a^r most liable to suffer
both from External and Internal Causes of the
Toothach.

L. 18. How do the teeth Break? These who
have the points all y^e hole of y^e roots shut up
must have y^e nerves of y^e tooth destroyed and
therefor cannot suffer pain from any Infection
of y^e tooth. As people for ordinary have y^e hole filled
up wth bone w^{ch} makes y^m not suffer so frequently
from toothachs as young ones do, and this is a
wise provision because as people advance in years
the Enamel or y^e base of their teeth become
thin by wearing and y^e for m^{uch} be easily broken
to cause y^e toothach. These who have y^e nerves of
the teeth entire must suffer upon y^e tooth break-
ing or loosening.

L. 19. Whence proceed the violent? Sometimes
after drawing a tooth the small artery is sunk
within y^e bony Channel and adheres to it so y^t
it can't be compressed by any External means
Nor can it contract its own Orifice, thus it may
constrict

continued to pour out blood till if patient dies 3/45
if proper remedies are not thought of the best
Method is to take some scraped lint and make
a small button of it and press it down to the
Bottom of if socket; above it put a larger button
that still a larger one and so on till they stand
out a little beyond if rest of if teeth. If there is a
tooth opposite to this socket it must press @
the lint and keep it firm in. But if there is
none a bit of wood, Iron or any hard body held
between if teeth will be a sufficient pres-
sure.

Sometimes a little Vitriol will stop if bleeding
without any lint; if none of these will do we
must try to shut up if Artery by touching if
bottom of if socket wth a red hot Iron.

I once drew a tooth to a young Lady from
wth there was no extraordinary hemorrhage
at the time. I sat and drank tea with her
immediately after probably from if warm
Tea, it began to bleed afresh. I sent for if
of Vitriol wth we drew some lint and put it
in if manner described wth stop if bleeding
notwithstanding

346. Notwithstanding about 12 o'clock that same
Night it broke out again. I had left a glass of
Spt. Nitric for fear of such an accident, it belid
with more violence than ever, and in a confusion
the took a mouthful of Spt. of Nitric. We
effectually stopp'd the bleeding but took off
skin from Mouth, & throat, & fauces and made
a set of fine white teeth entirely black, but
to my joy in a few days they recovered their
former colour.

L. 20. What makes it more difficult
The curvature of very long root of each lane:
thus makes it necessary to change of operation
in Extracting ym from of twisting ym there
should be small alternate turnings of twisting
and of Motion to each side to be given ym
all they are made very loose when they may
be brought almost perpendicularly, I said
near almost because if we can observe how of
Clock goes we may direct of Extracting Mo:
tion so as to turn over of Curve.

Tauskard Chirurg. Dent. Tom: Crap: says he has
hao

has Extracted several Canines this way. 347.

The Extraction of an Eye tooth is not dangerous so much on acct. of greater Sympathy they have than if eye teeth with the Eyes but because their long crooked roots are in danger of being broken & of breaking the jaw bone, any if any hemorrhage happens Applications to the Artery are more difficult in such a deep socket than in a more shallow one.

L. 21. What makes impossible & When the Ends of numerous roots of the Grinders approach to each other leaving a large space nearer the Base than what is at the point, the piece of the Socket which is in this place must come away when the tooth is drawn or the roots break near the point; If on the contrary the roots diverge much from each other the Sockets or roots must be broken in pulling such a tooth and frequently when the roots are straight the Adhesion of the Socket to the Bone is so great that the Socket will break off with the tooth.

340. I never saw any bad consequences
from breaking a socket for bare
part of jaw bone soon covers wth flesh
and any broken pieces that adhere so fast
to gums that it cannot be taken away
without tearing off gums generally
turns brown & soon in a few days & are taken
away without any trouble. Most people
are in great dread however for breaking
the jaw and if your operator ought to catch
the drawn tooth in a towel or napkin
under pretence of cleaning of blood from
it when he may separate & conceal any
part of socket that has come with the
tooth to prevent his being blamed for
every accident that might happen in jaw
years after. These many rooted teeth
the Grinders are to be drawn out of their
sockets in the same way as a nail out
of a board and there are proper Instru-
ments for drawing teeth in this way
with a great increase of force to
the operator by a long lever with which
his hand acts.

2. 22. Why have small worms? Then have 349
been a great many stories recorded of worms
being found in various teeth, that such
a thing may happen from an Egg getting
into a hollow tooth either carried wth air
or Aliments and finding a proper Nidus he
hatched and lived there I will not pretend
to deny, but I must say I never saw a well
doubted or satisfactory history of this kind;
those I remember I shall tell you with
my objections to y^m.

Jacobus gives us an acc^t of a worm w^{ch}
came out of a tooth in a plain distinct
way, he says it brought its head & tail to-
gether & made several humble jumps in
the palm of his hand. he mentions how no
Authority and talks of it in a way w^{ch} would make
one believe he had seen it, but in any place
he quotes Dr. Sydenham as his author, but in all
his works there is no such story one might
so that he might have had it from a very
distant author. In a word I think it ought
not to be depended upon. vid. Act. Haffn.
Pecher

330. Peckham in his Observat: Med: gives us a story
of a worm coming from a Carious tooth 2 inches
long and as gross as a common Cheese Maffer
this story confutes itself as no tooth could
possibly contain such a creature.

At one Mr Thos Bartholine in his story
Med: has 2 histories of this kind, one of a poor
woman who being plagued wth tooth aches
put up some honey into a Carious tooth
and next day she brought it away wth 5 pediculi
in planities (as he calls y^m) but how came
he to know but they were put up wth honey
we might very well happen if a woman was
poor and dirty. The other story he had from
a Surgeon at Copenhagen in whom he had
Credit; who upon dissecting a young lady
found a little worm with a black head within
almost every one of the teeth w^{ch} crawled when
taken out. I think I could acc^t for this by
what I have often seen without having recourse
to worms; when a tooth is drawn there appears
in its hollow a little substance like a Bit of flesh
upon standing a little the upper part of it is

is Exposed to the Air turns black, if you pick it out of its socket with a knife and hold it in your palm you'll plainly perceive a motion like a crawling w^{ch} I suppose have been all the worms Bartholine's friend saw.

L. 28. Why do teeth soon replace? This is a very remarkable phenomenon & not perhaps easily accounted for. La Motte in his Observations gives a very remarkable history of this in an Officer who was to have a tooth drawn. he bargained with a common Soldier for one of his teeth, both were drawn at the same time when if the Soldier's proved too large for the Officer's socket upon w^{ch} it was filed down even till a channel for lodging the lodging of the new appeared, it was fitted in and in a short time grew firmly to its socket so that you could not not distinguish it from the other teeth, but what is still more remarkable a good while after he was obliged to have it pulled out and if operation was attended with as much pain as if any of his own perfect teeth had been drawn.

From this it would appear that even if nerves joined

352.

Toucheard in his Surgery: Dent: says he
replaced 4 loose teeth after they were once
out, and they all fixed but never afterwards
had any pain in ^{em}.

In drawing a young Ladys teeth would he pulled
the wrong one first, he kept it in his hand
till he drew the other and put it in & it soon
fixed itself.

I myself saw a Lady who told me that when young she had a tooth drawn, and a ~~tooth~~
sound one belonging to a servant put in
on purpose was immediately placed in and
she shewed me the tooth as well fixed
and in as good order as any of hers only a
little yellower tho' she then had it about 30
years.

I was once present when a tooth was drawn from a young lady, and I observed one of my Instrument touching neighbouring tooth loosen it quite and raise it up about 1/8 of an

an Inch from of socket under pressure 353.
of feeling of jaw I pushed it in & fixed
very well and to this day she never knew
it was loosened.

Westcombe the player had 2 of his incisors
beat out with a file he told me he had
ym in his hand but was advised to clap
ym in again we he did. I saw ym quite
loose, but afterwards could never have
known that they were loose. But in all
these stories tho' if teeth came to fix
we have no instance of their being afterwards
loosened as in La Motte's story.

Q. 24. What are the proper methods of
drawing the different sorts of teeth? In
general of ~~different sorts of teeth~~ it may
be observed to be always a bad method to
attempt pulling out a tooth directly wth
a pair of Forceps, being Instrument gives
no advantage and a Man's strength of arm
is all he has to trust to w^{ch} may be often
not sufficient, so that I have seen a poor
creature

354. A Zealund dragged about of room by his tooth
when perhaps at some corner or turning
it would either break or come out. For Extract-
ing of Dentes Molares if common Instrum^{ts}
are extremely good for as the roots of these
are shortest tho' of traction is obliquely
outwards & upwards they pump up with
little danger, but such Instruments can
never be used for of long rooted Canines
or even of Incisors, for the oblique tra-
ctions outwards pushes of root ag^t of inner
side of of Gum and tears it to pieces. For
drawing these then if properest Instrum^t
is a plain strong forceps w^{ch} you lay
fast hold of of tooth and by gently twisting
it from one side to another you first loosen
it and then you may pull it directly out.

The Canine have for of most part curved roots
we must th go for to turn and in taking out
for fear of hurting the jaw by of force.

The upper Dentes Canine have almost
always this curve & its points look forwards
so you ought to push of tooth of contrary
way

355.
way in Drawing. When there is only a
stump of a tooth to be taken out wth these
Instruments can't take hold of a punch
Must be used w^{ch} is to be pushed a little between
the gum and tooth till its edge seats firmly
on the fly or several of your contrivances may
be fallen on by a Mechanical head for forcing
out such a stump; Drawing is common-
ly if last remedy thought on for if too thick.
But among our cures Burning behind the
Ear was commonly used and often wth success
as it destroyed if nerve going to if teeth and
then all these served by that nerve decayed
also & mouldered away. of if same kind
was if famous Quack who compressed if
nerve strongly in its passage to if teeth and
by this means ~~the~~ too thick w^{ch} we could not.

The Intervertebral & oblique
processes do not swell and if cartilages
become much thinner in old age w^{ch} must
cause if spine to bend forward in old age.

A just prognosis & if there is a general
bad

356. bad habit of body that is of original cause
of this Curvature, it can't be removed such
as confirmed palsies, Convulsions &c If the
Bones are fully formed by if age of patient
there must be little hope of a cure if disease
is of long standing and of great Effects
when there is no such impediment know
Success may be promised.

The Manner of Executing & I have
seen of thicknes of one side of one or more
Vertebra mistaken for a Luxation
and it seems to have been long mistaken
or ways such violent methods for if
Reduction would never have been pro:
posed as you may seen & felt that the
Symptoms of if 2 diseases are so
far if same that in both there is a preter:
natural Curvature of if Spine with an
Appearance of thicknes on one side of
the Vertebra, that they both can give very
Violent pain to if patient, that they produce

a palsy below all of parts where they turn over
with involuntary Excretion of feces & urine, 357.
But then there is no manner of difficulty
in distinguishing y^m from y^e ever. When
there is a Luxation of Curvature made
with some violence at once or quickly twist
off the spine when it was Bended, the pain
is immediately very violent and if Paralytic
Symptoms come on in a few days after the
Luxation.

Whereas in y^e Curvature from y^e unequal
Growth of y^e Vertebrae the Curvature increases
very slowly, and till it is far advanced y^e pain
is not so violent and if palsy does not appear
till the swelling be large. I have seen three
people who have had palsy from y^e gradual
swelling of y^e Vertebrae, but I never saw one
Luxation of y^m, tho' I allow it is not an
Impossible case, probably several histories
are related of a Luxation, w^{ch} on a strict
Examination might have been found to have
been a preternatural growth of one side of
the Bone, if the Curvature from y^e unequal
Growth of y^e Bones is considerable. Generally
caused

350. causing the wear stays with pieces of steel
on the outside of your waist so firm & so fixed
that they sustain if weight and so relieve
the muscles & may at some time counter
: all if Curvature. If if preternatural thick-
: ness in if Back part of if Vertebrae the body
is Bended forward wth great pain to if Back
and if Spinal processes hurt if Arguments
so much that they are in danger of ul-
cerating and Exposing if processes to if Air
when if they become Carious, in such
I would cause two thin plates of steel
be fixed to if Back part of if Stay wth a long
cane underneath answering to if part
where if Curvature is so that no pressure
could be made by if Stays or steel on the
Spinal processes or any part of if Skin
that was galled by if prominent Bone
let if upper end of if steel plates rest on
the Bolster upon if upper part of if Os
Sacrum, and put a Belt round if part of
the Stays, where if steel plates bear a
little on if body.

A boy was brought to me who had his arm
long

long hung to his neck in a scarf after being 359
broken in order to support a better the accustomed
himself to raise up that shoulder almost
to his Ear so that if you sunk in proportion
and if spine was increased wth conversely
nearly on y^e side of y^e broken arm. I
ordered if y^e sound arm should be hung in
a scarf wth a large piece of lead on it, by this
he was obliged to raise y^e shoulder while y^e
other gradually sunk & he became straight.

For an ²²yr Boy who was quite Bendid fore-
ward I caused two Iron plates to be made &
fastened along his Back, but so as not to
press my lower part for fear of hurting
the ligaments. Before y^e plates were put
on he could not walk twice or thrice y^e length
of my room without tumbling down by a
great pain from y^e spine of y^e Vertebra
irritating and hurting the overstretched
parts about but after getting my plates
he was able to walk home along half
Mile. In a word if any of these suggestions
I must depend entirely on your own judgment.
Consider

360. consider well, I assure we produce them
and if you must be something as con-
trary to that as possible.

Several who were crooked to y^e sides were
cured wth stays & steel in their sides. In all
of us instead of putting Bolsters in the
convex parts w^{ch} is common stay makers
always do wth a design of concealing y^e
deformity, I placed y^e Bolsters on the
Concavelys where y^e steel pressed by the
Belts most on y^e ribs or spine.

Simple directions as to posture &c
To illustrate this I shall relate ^{the} ~~one~~
~~one~~ made by such directions.

A boy who had been weakened by a tedious
fever was placed every day for 6 weeks in
an arched chair at y^e side of a fire with his
back to y^e light, his companions were al-
lowed to come and divert him, he leaned
over y^e arm of y^e chair furthest from y^e
fire to partake of their plays. His Mother
stealing him one day discovered his spine
very crooked, for w^{ch} I was consulted; I ordered

if Chair to be put on of our side of of few as 36
a Gun that might be depended upon; the
Mother was affronted at simplicity of
it we obliged me to order some Bals: Opio:
dildoch: to rub of back with, but insisted if
Chair should be transported. In 2 weeks
more of spine had got of curvature to the
other side for we I was again consulted
and advised if Chair to be put to its former
place, but recommended to if Mother to Exa:
mine if state of the spine every morning
and a spoon as it was straight to change
the Chair every 2 or 3 hours, from one side
of of few to of Oyr, we was done till boy
was strong enough for rambling about
by which time he was straight on his back
and continued so ever since.

A girl who had been employ'd some
time in sewing at a tent was observed to
have her spine crooked, I was consulted
but advised she should continue some time
longer at of tent but to keep if left hand
above of stuff she was twilling as she
had employ'd if right one before, she became
straight

362. Straight and then I discharged of sewing
any more at a time till at least she was at
her full stature and strength.

Another Girl having got of habit of pulling
her right thigh upon her left knee when
she was employed wth her needle, & bending
her loins and lower part of her Thorax
towards ^{right} left side while of shoulder, neck
& head was towards of left, she became very
crooked in her spine, I flattered her to learn
to sew wth her left hand and recommended
the like posture but reverse to what was
formerly: whenever she became straight
with this I prevailed wth her Mother to
allow her to sew none for some years, and
then take care if Child should sit straight.
She is now a handsome Lady.

In general let of posture you order a person
wth a crooked spine to stand, sit, or lie, be
the reverse posture of if one that contributed
to of Curvature. Selling one foot forward in
standing, sitting on one hip, lying on pel-
: lows differently disposed are great helps
And looking at of effects wth they cause where
of

the patient is put into any of these postures 363
I must teach any one of common sense how they
ought to be varied in various cases in w^h
his advice may be asked.

All conspire to allow & The thick Lig-
: lages allow greater looseness & distraction
of fibres consequently more motion on all
sides. the standing oblique process, shuffles
easily in all directions, and if erect spine
ones don't strike against each other to stop of
motion backwards.

Of the occipites are firmer & These
rising sides of occipites hindering Luxa-
tions to either side.

Of which these & Particularly if inferior
oblique muscles wear of proper circum-
: gyrationes Capitis.

And another ligament runs up &
Widbuckst denies Lydes Mol. lib: 3. S. 16.
that there is any ligament fixed to if spine
of if process Dentatus but that what is described
as if perpendicular ligament, there is a
process of if transverse we run upwards
to if occipites but is not fixed to if tooth like
process

364. tooth like process.

The same Mechanism & The reason
of γ curved parts of γ Arteries being lodged
within bones is proper here to prevent
the course of γ Blood being stopped by γ twisting
& consequent decrease of their Faculty, w^{ch}
they would otherwise have suffered in γ
Motions of γ Neck. But it will be further
asked what necessity there is for such Cur-
vatures in all γ Arteries whose branches
serve γ brain and cerebellum.

This is a now difficult question but is
improper to be annexed here. It belongs
to γ Angiology & Anatomy of γ Cephalo-
lon.

Greatest Anatomist & Galen had com-
mitted a mistake here in saying γ head had
no circular Motion on γ first Vertebra. Eu-
stachius describes this circular Motion of
 γ head to be performed by γ first Vertebra of
the Neck upon γ second but will at any
rate make Galen say so too.

Proper Moderators & By a circular
Joint these Moderators may be stretched
too far and γ oblique process of γ first

first Vertebra may be made to go in part
off of Superior Oblique process of 2^d 365.
we imagine what is called a luxation
of head from we several have been said to
have been Apoplectic, but to have recovered
when their head was strongly pulled.

History Luxat. Vertebro. I have seen
a Gentleman who ~~was~~ told me he once fell
from his horse, was instantly rendered
insensible, but his servant afterwards
told his head remained fixed with face
turned to one shoulder, and if his servant
had put his knees upon his Master's
shoulders and wth a strong sudden pull
replaced his head we was attended wth a
Crack. The Gentleman immediately re-
covered and complained only of a little pain
there for 2 or 3 days owing to overstretching
of Ligaments. It should y^e be a rule
that when you see a person receive a fall
or any o^r violent shock & if head fixed
in this way you should immediately ex-
tend head strongly, and gently turning
it round to its proper place slowly oblique
process to their former situation.

366. In danger of being twisted & for
when a blow is wound as per round
as a large one all its parts must be much
more pressed one upon another.

The relation is a perfect & By turning
my hand slowly as far as I can without
moving my feet you may observe, first
the circumgyration of ^{of} first Vertebra and
then in a little turn to all ^{of} our Vertebrae
of ^{of} neck; after we those of ^{of} Back &
Loins yet a little; these are succeeded
by ^{of} *capitulum* moving upon ^{of}
^{head of} *thigh* Bones, then ^{of} knees, and at last
the joints of ^{of} Ankles contribute a small
share in performing their circumgyration.

The thick Cartilage & when I
mentioned ^{of} great motion of ^{of} Vertebrae
of ^{of} neck; I took notice how thick Cartilages
& erect spinal processes contributed to it, ^{of}
deep oblique processes of ^{of} Vertebrae allow
each one to move enough without ^{of} danger
of Luxation wth they would otherwise have
been subject to by ^{of} ~~some~~ weight & force that

is often applied to you. we would have made
you go from each other if not prevented by 367
the upper ones. Entering into such deep
deep sockets of the upper Vertebra below.

Tho' it is not so great & The head
moving backwards upon the Vertebrae of
neck alone describes a greater Arch of a circle
than it does when moving only Vertebrae of
the Loins alone & y^e motion of y^e Vertebrae
of y^e neck must be greater ~~than~~ y^e space
the head moves in y^e latter case is larger.

Or their Pressing their Muscles & By
pressing you upon y^e Ilium or ribs when y^e
Spines reclined to either side.

Separation of the Bones & I know not
that ever y^e bones of y^e Vertebrae were separate
from each o^rs except by Bullets or such things
and then an End was put to life very soon even
the dislocation of y^e Oblique process causes death
if a Reduction is not very soon made. In talking
of y^e Crooked Spines I had occasion to take notice
how y^e Luxation happens, & how they were to
be distinguished. It is impossible y^e method
of

360. of reducing here formerly used could ever suc:
:ced for by pressing violently on of protuberant
luxated bone w^o is of method proposed by Paul:
:tetus Arnann: (Chyrurg: the oblique or
Spinal processes might have been broken but
could never be put into their place. The dis:
location of these processes only happen when
the spine is bent far down for in that po:
:sture alone they can be made to separate
so far as their small surfaces covered wth
Cartilages are no more in contact, after
the dislocation of under end of inferior
Oblique processes rests upon of upper &
outer side of superior Oblique processes
of Vertebra below, and of Muscles that
are greatly stretched & fortified to keep ym
fixed in that preternatural situation not:
:withstanding what of Muscles suffer by
their overstretching in this luxated state.
And notwithstanding its being a general
rule to save overstretched Muscles from of
further distraction tis necessary to bend
the body so far that of process from of upper
Vertebra may be fully raised from of below

below after we and not till then if luxated, 369.
Oblique processes may be directed to go back to
their natural places when if Spine is restored.

Because of its largeness & Both of Greeks
and Romans made use of word Sacred
to Express of large extent of things, thus *επα
σαρκα* more Sacrament, wide extended
sea. *Αυρη* Sacra fames, a violent desire
of riches.

Transverse consequently unfavour-
able & a small beam placed perpendicularly
can bear any weight on it top of it, and a small
weight breaks when placed horizontally being
supported only at it Ends & if weight is laid
on it middle the weight sustained by
the Os Sacrum is great therefore they need
to be strong.

Therefore the same motions of To wit if
last Vertebra of it Loin may move only Os
Sacrum as if ease commonly in bending
the body whether we stand, Or if Os Sacrum may
move only last Vertebra of it Loin when we
an

370. swelling and raising our Pelvis with our
Lower Extremities.

Proidentia anus In this case of upper
part of γ but falls into γ cavity of γ part
below & is pushed out at γ Sphincter Anus
are inverted as women turn γ Intestines
of Animals when they make puddings of
 γ m; sometimes γ but that is inverted is
situated naturally very high and comes into
a great Extent. The Os Coccygis in young
Children is not able to perform its office
of supporting γ Intestinum rectum very fre-
quently, hence proidentia Anus is common
among γ m; In this disease of Vellous coat
of γ Intestines is turned out. A general laxity
of Body we takes place in Infants or any par-
ticular weakness ~~in the~~ γ place. Infants
can possibly happen to γ but rarely May
occasionally be attended with γ flexibility & weakness
of γ Os Coccygis. The common Method of Re-
:duction is by pressing up γ but at once with
an oiled Cloth or with γ hand. It should be a
certain rule to attempt γ Reduction as quickly
as possible for γ but is long exposed to the
Air the Sphincter Anus contrains upon the
reflux

reflux of blood is prevented & an Inflammation comes on w^{ch} Ends in a Mortification
but if taken in time of Reduction is commonly
Easy.

The proper Method is to press upon one part of
the Circumference of the Gut wth one finger, then wth out
taking it away press up of Neighbouring part
wth a finger of your hand, then keep that fixed
loosen of first finger & put up a little more till
you have gone round in this Manner & got all
the Gut within of Spincter, then wth one finger
I ought to be put in a proper Method & kept free
of sore places; then a proper Bandage may be ap-
plied to restrain it from falling down again. But as if
printed danger of this happening is when the
patient expects to stool he should be directed, or if
an Infant if Nurse should be ordered to hold a
finger on ^{each} side as near the Anus as pos-
sible to prevent it.

I never yet met wth a case of this kind At-
tended wth any difficulty but one: A young
child had his Intestines hanging out full 4
Inches. The Surgeon in ordinary of family
reduced it several times, but it still returned
I was then called, and tho' I did not promise a

372. a cure, yet I certainly thought I could make
one. I made it of the reduction in the ordinary way
and as I could push the gut into its proper
place situation but upon removing the
finger it immediately followed. Vide 2 Vol. Ep:
Phys: et Literar.

Motion backwards & forwards & Authors
trial of Luxations knew I never saw, but
believe they would be of exceeding bad consequence
because I knew several women who have suf-
fered violent pain many years after having
strained thus in Child birth or having bruised
it by a fall. The stretching of Ligaments
would be much greater from Luxation and
the teguments would suffer from it more of
the Os Coccygis coming outwards as if Rectum
would be by coming inwards.

Right Management of it & Prawn
his book do observe but especially in his Oper-
:nat: & Chirurg: reckons of way of managing
the Os Coccygis in times of delivery only of
the present discovery, but if Accouchers
since then have quite disregarded this as
of no importance. Davenport says by pressing
back of bone, the Pelvis & so of passage for
the Child is considerably Enlarged but that

373.
It often requires such a force to do it, as he could scarcely wth his hand tho' it was a strong one.
But his Antagonists say he may do a world of mischief. Why so he may in any o^r operation. They also say there is as much room lost by if finger pressing if bone as is gained by reflecting; But I see no necessity for drawing if Child and finger along at the same time. You may still make way and Enlarge the the passage for if head. There is also an^y Advantage to be had from this pressure by stretching if ligaments it raises & increases the pain by wth the birth is accelerated.

The hard labour of women who are advanced in years before they marry may be in a great measure owing to if Cartilages or articulations of if Bone becoming so firm as not to allow it to yield. There have been great disputes whether if Opa Innominate do not need a sort of yield, both at their junction of if Os Sacrum or wth one an^y during if time of Delivery to Enlarge the passage thro' wth the Child is to come, Bauhin, Sprellius, Diemerbroeck assert they have seen women who died immediately after

374. after delivery and whom they depicted, this
conjunction especially at of Os pubis so loose
that if bones would easily slip or pass by each
other a little way. Riolan says that in Bows:
men he depicted immediately after their deli-
very he never found this appearance want-
ing, And that in some instead of strong
Ligaments connecting of Ilium & Sacrum
he only found a sort of bloody, fleshy and
soft substance interposed, we allowed a good
deal of Motion. On my hand Helidanus
says that he has often seen in very hard
births purposely put his fingers upon the
Conjunction of the Os pubis, but never
was sensible of the least Separation; Dionis
affirms he never found it in his Dissections
immediately after delivery, And Monzague
who had great opportunities for these things
says that in a few of his many dissections
this Separation was found. I would join
with him in saying that such a thing would
happen perhaps in a very few instances,
but in general I should think these bones
too well secured to allow of any such disjunctions.
I have often tried Helidanus's Method and still
w

with the same success as he even in such a
labour that if Midwife was obliged to put her
foot to y^e bedside and pull y^e Child w^t all her force
while an o^r holding her by the Middle pulled
her back. But this I applied my finger im-
mediately to y^e ~~Pubis~~ Pubis, and made all attempts
to move it yet I could not do it. In these
Dejections also w^t I have had an opportu-
nity to make, my whole strength was scarce
sufficient to burst y^e Ligaments w^t connected
these bones. But when this appearance
occurs I believe it may be accounted for
in this manner. When the Child comes
down, or falls to its proper position w^t y^e head
to y^e Os Tineæ, it compresses a great number
of Minute Vessels w^t hinders y^e return of their
fluids is stopped, and of consequence the
Internal surface of the Vagina swells. w^t w^t
a gentle Stiffness of Muscles, are the signs
by w^t they know their Delivery is near. By this
Lymph stagnating long here, by y^e difficulty
of labour or by the stimulus from y^e violent
throw, it may be drove forwards y^e Cartilages
w^t they must descend, relax and soften w^t will
allow

376. allow y^m to yield & facilitate delivery from
this also we may account for appearance
mentioned by Prolan of conjunction of the
Heart & Os Sacrum.

The women who are old maids & besides
the firmness of the Os Coccyge, there are other
reasons we make such labour tedious & even
viz the rigidity & too great firmness of the Os Ilium
& also of the parts thro' w^{ch} the child is to pass
the want of flow of the flow of the Intra-uterine
liquor to the parts w^{ch} younger women generally
have.

I preserved from an injury & which of
point & segments covering it would be subject
to by the point standing straight down or bend-
ing backwards. Women having the Os Sacrum
& Coccyge now turned back they are more sub-
ject to bruises here than ever were.

By the actions of the Internal & w^{ch} would
press upon the bladder & squeeze out of urine
upon crossing the thigh if they were hollow
and had an Aponeuroses on their Internal
sides w^{ch} is firmly connected to the bone all round
the foramen & therefore prevents its obliteration.

to swell inwards towards, of Pelvis, when it con- 377
tracts this Aponeurosis likewise better secures
any falling down of of bowels thro' this hole we
notwithstanding these precautions sometimes
happens.

Several Observations of Bauhinus gives
an Example of a woman 24 years old, who
was hanged at Paris 10 days after she was
delivered of a Child whom she murdered. When
either of of legs of of Corps was raised of of pubis
of that side started $\frac{1}{2}$ Inch higher than that
on the other side. he tells that Pinus who was
present gives a full acc^t of this Ex^p. Bauhi-
nus says of same thing of a Lady who died
undelivered of of Placenta, he then quotes
Terrius, Sydenham, & a great many writers
who assert this happens. Others again deny
that it ever happens, but I think Morgagni
has hit of proper Medium by saying that
in some laborious cases it does happen
but in of greater number it does not appear.

Many disorders would result of Those
whose Constitution is such as to allow
the bones to become moveably at birth and
the

370. the least capable of recovering of tone of
their parts when relaxed, and those who
have greater violence done by Child birth
to ~~if~~ Ligaments & Cartilages should suffer
more at first, while if you suffer long
from weight of body extending of
ligaments when they attempt to sit or
stand; Ludovick's woman could not get
up stairs but dragged one leg after another.
I am likewise more inclined to believe
it, as I have heard some women of a more
delicate tender make complain for a long
time after being delivered that they sunk
thro' their haunch bones upon attempting
to sit up, this must be owing to a particular
weakness in the ligaments connecting these bones.
Such women should be ordered to lie close
without attempting to rise or sit up till by a
little rest the ligaments acquire their former
strength and firmness.

Conoid & I don't mean here a figure strictly
so called by the Mathematicians. I take Conoid
in another sense viz. of literal inspiration
of a word, a figure appearing to a ~~single~~ ^{one}

on when one for all warns you if we Anatomists
are not very ~~exact~~ exact in our comparisons 379.
frequently a small degree of likeness, may give
afford that those who make comparisons, have
too lively imaginations for the common herd of
Mankind who can see no resemblance between
two things that Anatomists compare together
& call them by the same name on account of their
mutual likeness. We have particularly used
a great deal of freedom wth Mathematical
Terms & figures without being careful enough
how to employ them. When an Anatomist
writes that of part he is treating of is a certain
number of Mathematical lines in Breadth
or length, I beg of you not to ask a Mathema:
tician how much it may be in common wth
measures the Anatomists measure so many
parts of an instrument along, the Mathematici:
an will think you a Blockhead for imagining
that a Million of Mathematical lines can
have any breadth.

Removed far from their natural place
and therefore a part of ribs especially of
them

380: true ones is now easily cured than any other
one of the body, then seldom more needs to be
done than put a swath round the body to keep
the ribs from being much moved in Breathing
a cough with a fracture of the ribs gives pain
and needs of Antiphlogistic Method to prevent
Inflammation. When ribs broken by a bullet
or any other force that drives the Birds inwards
the Pleura and lungs hurt by such an intruded
piece of bone needs to be soon relieved by extracting it.

In simple fractures of the Ribs after
telling us of little danger after fractured ribs when
the bones are not beaten inwards, Moderate reple-
tion of the belly gives direction to the ribs, but
the emptying of it gives pendulous ribs and
their being pendulous creates pain. Parry is opposite
to Hippocrates's rule, and tells us that those
who have fractures of the ribs are always
worse before eating than after it, because the
full stomach sustains the free ends of the ribs
we would otherwise be pulled inwards by the
muscles and Diaphragm by the fractured
end of the fore part must be turned outwards to
hold the parts in place.

Empyema at some other place

For the perforation into of Thorax is between 301.
the 2^d, 3^d, or 4th ribs counting from below upwards ^{the proper}
but in many human bodies especially on the ^{places}
right side, if Diaphragm rises higher than only ^{between} 4th, 5th, 6th
inside of if ribs, in such a case if Surgeon would
wound if Diaphragm and cut into of Abdomen
instead of if Thorax, we not only does not answer +
his Intention, but immediately endangers the
patient wounds in if Diaphragm being gene:
rally mortal. On if our hand in Suppurations
and abscesses of if liver the Surgeon might make
an opening lower than other ways he would
inclined out of fear of penetrating into of Thorax
of as he would be in no danger if he knew the
Anatomy of the parts here.

The Bodies increase gradually & because
the long parts always extending itself towards
the sternum as all long fibres do when they are
not strongly resisted or rather the Cartilage gradu:
ally, & pieces by if large proportional length of if
Cartilages in if ribs of the skeleton represented
by Eustachius in his tables we might judge that
tho' there were many more to know you may
that they were of a proportion of young subjects.

382. It yielded enough to Elude & Scavell's
us he saw an anvil 600 lib: weight laid on a
Man's Sternum and that a Bar of Iron was
broken wth strokes on the anvil, and that in
Turkey all of Emperor's Marriage there were
people who supported 7 or 800 lib: on their breasts
for a considerable time. he accounts for the
bearing of the strokes of the hammer in this man-
ner the spaw w^{ch} of anvil moves at each stroke
of the hammer is reciprocally as if swept off
the anvil and if hammer, then ^{the} anvil
must move a very short spaw w^{ch} of Thorax
would easily move, but even this was not en-
ough for the man laid himself on a board
that was only fixed at both ends and being
flexible it moved as much as if it was on
hew of hammer - some one said he of anvil.
he accounts for if Thorax bearing such a great
weight by the respiration ^{a kind of} being filled wth air
and from w^{ch} there is a small pipe going out too
to resist if weight is upon it. And he observed
the man did not speak wth hammer of anvil
was upon his breast but he was signally of
people to take away the hammer and the anvil

Too much turned outwards or inwards 383.

Rosorius saw an old man whose Cartilage
Ensaiformes being large & opified rendered him to
bloop without pain and he says it turns inwards
sometimes only livers of children & causes an Astho:
: phia. Paaw affirms that he has seen a tall
who had a difficulty of breathing from an opifua:
: lion of the Cartilage & also it being too soft: Bor:
: richius says he threw an of Cartilage inwards,
they had ~~all~~ a pain ⁱⁿ of part, Difficulty of breath:
: ings of it were a little relieved by Extending
their heads, all of y^m al had were killed by it.

Rosorius ~~also~~ Sigerus in Miscellan: curio: Anno
1600. ~~the~~ was a young of an Infant who had
a Thump from of Cartilage ensaiformes separating from
the Sternum and relating ^{it} from Ballan: Epidem:
At propos: 242 of one Border who died of disorders
of his Belly & intolerable pain at his Stomach whose
Cartilage Ensaiformis was very hard & grown
inwards. In this I hope will show may see the
case of a woman being under an uncommon
kind of Hydrops ~~caused~~ where Cartilage Ensaiformis
was ~~causing~~ of a tumor ~~in~~ and with pain
curately

304. Directly forwards by w^{ch} he could not allow
the bolts to press upon that part. Two Mon-
curd a tailor who lay striking his breast upon
the gunnel had drove the point of of bone inwards
so as to occasion great pain & uneasiness especially
upon his bending forwards. the bone was so very
loose that it could move very easily; all I ordered
him was to keep a swath about his belly with
an intention to press upon of Abdominal viscera
upwards we would support of Bone and even
help to push it forwards; for if same had I desired
he would always keep his stomach a little distended
To strengthen of relaxed ligaments I made him rub
in aq. Reg. Hungar. Brandy or any of such.
Spt. & Cover of part wth a little fumigated with
L: Benzoin: he went away & some years after
sent me thanks by a student of mine & to tell me
he had exactly followed my directions, if loose
bone was fixed & he quite free of all his complaints.
If such mild Methods fail recourse must be had
to a very bold operation, pulling down to the
bone, then fixing a screw to it by w^{ch} it must be
raised, In doing this you must take care to cut
precisely into of middle of the bone, and then
besides of common Ligaments you must of Aponeu-
roses of of Pecti & of M. obliquus al. & of M. obliquus
but

but if you go on one side you are in danger of wounding the mammary Vessels which run on each side, or some other parts of consequence —

The Cartilago Ensiformis rising outwards is attended with the Inconvenience of an Irritation of the Teguments, which may produce an Ulcer, in which the Cartilage may be laid bare and become carious, but this disorder may be soon cured if the Cause which hurt the Cartilage can be removed, for surely it can be gradually pressed back to its part by Compresses and Bandages, when the Cartilage is down or pressed too much inwards, the consequences may be much more dangerous, and the Cure is more difficult, for not only is Respiration immediately hurt by the middle Fibres of the Diaphragm, not being sufficiently tense, but the pressing upon the Liver may cause Abscesses or Schirrus in that Vessel, and the danger of the consequences is greater when it is ossified & firmly connected to the Sternum, than when it is in a Cartilaginous State, or if it is too loosely connected to the lower part of the Sternum. Those who don't know that the Cartilage may be thus turned inwards, & don't examine the Condition of it may often fall into great & fatal mistakes. Thus for example, if the uneasiness created by the Cartilage & believed to depend on
Slimy

slimy matter in the Stomach or Nervous disorders in the
 Bowels, the Emetic or Cathartic Medicines, which
 probably would be given, would increase the Inflammation,
 hasten a suppuration & confirm the Schirrus of the Liver
 and tho' the Seat of the disease was judged to be in the
 Liver & the Nature of this disease known, yet one ignorant of
 the true cause would never cure it. He might do less harm than
 when the mistake in the other supposition is committed, but the
 cause remaining, the Disease will continue. The method of re-
 moving this malady is either sufficient or unfruitful. Cupping
 Glasses applied to the Tegument or a sticking plaster with a
 string in the middle of it can sooner make the Teguments se-
 parate from the Bone, than raise it up. And if they could
 raise it, there would be no benefit, unless the raising power could
 be continued, till the Connection of the Sternum & Cartilage be
 confirmed, which is not proposed & is impossible, for this Cartilage
 is not supposed to remain in ~~the~~ place, as other luxated bones do,
 have nothing to retain there. Emetic & Nervous Medicines are
 proposed by Boerhaave as necessary medicines in this distemper,
 which probably might have been the cause of all his three Patients
 dying; When there is a relaxation of the Ligaments by which the
 Cartilages fall backwards, the gentle constant pressure of the con-
 strained Bowels is the only means of sustaining it till the Liga-
 ments are made firm enough by such Meds. as strengthen them.

I already told you in relating the Case of the Sailor, what I would propose for executing this when the Cartridge is ossified; but if firmly fixed to the Sternum, or its point inwards so as to hurt the Liver, it may be palliated by the Patients taking at once small Quantities of cooling Food, and avoiding to bend the body forwards, but a full Cure is almost impossible, for one can scarce order the Bowels to be pressed outwards with such force as has a chance of raising this fixed Bone, lest this disorder of the Liver be increased by it; Hence few Surgeons would be bold enough to fix a Screw into the ossified Cartridge by which it might be broken and pressed forwards afterwards by the Bowels, one or other of which seems to be the only Means by which it can be raised.

Tho' the Motion & several contents that the Sternum does not move in Respiration, alleging that raising of it would contribute nothing to the enlarging of the Cavities, in which the Lungs play, because the Pericardium & heart are only placed beyond it, there are no Lungs there but whoever makes a Porosion between the Ribs of a dead Body, so that he can see what happens when the Sternum is raised, will observe, that by this Bone raising forwards the Pericardium, the back parts of both the Cavities of the Thorax, especially the left one is considerably enlarged, & therefore the raising of the Sternum increases the Cavities in which the Lungs are expanded. The Argument in the Text about the Motion of the Sternum being evident in strong large breathing proves that this Motion is of use in Respiration, & is exercised the more
much

much lower degree in weak breathing, when indeed the largest Enlargement & Diminution is performed by the Diaphragm because it does not require such a strong effort to make as much play as is necessary for raising the Ribs and Sternum to the elasticity of the Ribs. —

It is probable for this Reason that Children have more motion of these Bones in Respiration than Adults have, et cetera. The difficulty of motion in Hydropic people & in Women big with Child causes them to have such manifest heaving in their Breasts —

The human Thorax can perform & Mr Belchier communicates to the Royal Society the history of a man whose arm was without the Scapula which with the Clavicles was drawn away by a Mill, he lost a great deal of Blood at first but never had an hemorrhage after, tho the Clavicular nor any other Vessels were ever Tied.

Mr Cheselden gives us a figure of this man & of his Arm in Anatomical figures, and I examined the man in this place, who shewed his arm in a Box, I felt there was no Scapula on that side of the Trunk of the Body; he breathed & did every other Function, unless what depended on an Arm, as well as ever.

The pain violent Inflammation & I have often seen these symptoms very dangerous after a Fall or Blow on this part, & they generally continued long unless Evacuations of Blood have been made in the beginning of the disease after the violence of the Inflammation is over, I think Pulvices of ~~Red~~ Capet, Fomentations of Water in which white Vitriol has been dissolved & such Strengtheners do
fully

fulley better towards a Cure than Emollients.

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It can be moved upwards. & Mr Winslow gives us a minute detail of all the motions the Scapula is capable of performing in the several Actions we do, & of the Muscles that are employed in each, but as words cannot express this in a manner which I imagine you can understand, I shall move this Scapula in the different ways I leave you to compare the Actions in your own Scapulas with Mr Winslow's account.

Yet the larger Share of them & To be convinced of this, hold in your Scapula firm with the hand of the other side, then make as much Motion with the Arm, the Scapula of which is fixed, in any direction you please, when you find the arm can move no further in this direction you intended, let go the Scapula, & perform whatever motion you can in the Direction, by the like experiments in the several directions you will then see how much the Change of place of the Scapula contributes to the extensive motion of the Arm —

Are assisted by the Ulna & To be sensible of this, take hold, with the Thumb & fingers of one hand, of the Ulna of the other forearm, to hold this Bone firm, while you make as much Pronation & Supination of the hand as you can, & then quit hold of the Ulna & perform the same motions, & you will see them a great deal longer; that you may judge how much the Ulna moves put your hand as supine as you can, put a finger on the Ridge of the outside of the lower of the Ulna, make an Impression with the nail of your finger into the Skin

Skin covering that Ridge, hold the finger steady while you turn the hand as far as you can with the motion of the forearm only, you will then see the Reception of the print of the Skin, & how great a share it has received. —

When we design & In making what Fencers call a Rush in Quarr, all the Joints here are employed to turn the hand into a prone posture.

The pain of Sprains & What the Antients called Nervous parts, such as Tendinous Aponeuroses, &c. are more sensible than any other more extensile softer part, when any Violence is done them. When they are pained, the flux of humours is greater towards the neighbouring parts; upon which account, Joints that have any such nervous parts passing over or near them, swell greatly when they are sprained, & as the Liquors which lubricate Tendons are thick & viscid, when effused out of the Course of Circulation, such Tumours are very difficultly dissolved. I have known several who have not had the use of a sprained hand for several years after they received it. Nearly the same Directions are necessary in Sprains of the Wrist when any way violent; tho' in this case other Symptoms arise which require a different Treatment. It is common after a violent strain here, for a large hard knot to arise upon the backside of the Wrist. This often leads Surgeons into dangerous Mistakes, and that two ways. First, it may be mistaken for an ordinary Inflammation, in consequence whereof, emollient Pultices are applied & perhaps an Incision made, from which the worst of Consequences must follow. I have

have often seen this Case mistaken for a Luxation of the Wrist (which I never saw or heard of / which I am surprised at, as a Luxation must be easily distinguished if it happens — If the Tumours on the forepart were owing to the ends of the Bones removed from their Sockets, then there must be a proportional cavity in the back side which at once might determine it. Sometimes such another knot as hard as a Stone will rise on the Outside of the End of the Ulna; there is the same danger in mistaking this, but if it is owing to a Luxation, the opposite side must discover it by a proportional hollow. I scarce think it possible for the two Bones to separate so far that the end of the Ulna may form such a Tumour, while the Radius keeps its place, but if it were so, we should soon find it out by feeling the cavity left between them —

The first of these knots viz. those on the forepart of the Wrist, I can easily account for. In this place there are a great many Tendons of the Flexor Muscles going over, & of consequence there are a great many mucous glands for separating a liquor to keep them moist, flexible, and fit for motion; The Tumours there, after the Strain, is nothing but a Collection of this Mucus; The other Tumour, I own, I am at a loss how to account for. The proper method for treating these Strains, as I said before, is by the Antiphlogistic medicines; for the Tumours are, the Resolvents Discutients, & attenuating Pultices when they are nearly gone (which is often a work of time) it will also be of use to hold the Wrist for some time in cold water, or to let the water fall on it from a height, by which the Capels are contracted, Obstructions removed, & the Ligaments strengthened But

But if this is true when the knots first appear, it will fix the Obstructions, & bring on mischiefs; The Cure of these Sprains depends upon plentiful bleedings, Purgatives, & other evacuations at the beginning with Fomentations & Pulvices of Cloret or such gentle Astringents: after the pain is gone, Sp^l Minder: Vinegar with any of the Alkaline Salts or Spirits, or a cloth dyed in Oxycrato or Sp^l Camph: to assist in dissipating the swelling after the use of cold Water with friction of a warm cloth to recover the strength of the Member —

Which Disposition & The fingers can be applied to Bodies of all Figures, but without this difference of length they could not hold Spherical Bodies securely, & if the last & second Joint had not the flexors inserted into them by which they bend the first Joint forwards, we could hold very little in our hands: If the first Phalange were moved first, it would keep the substance out of the Palm of the hand before the other were laid over.

Our Centre of Gravity & When we stand straight up, our Centre of Gravity falls between our feet, so that we can't support ourselves, when one foot is raised from the ground, because a line falling perpendicularly from our Centre of Gravity hits to a side of our Base; to prevent therefore our falling, we must alter our Centre of Gravity by tossing our body over, much to the side of our foot, which is on the ground; here we obliged to change our Centre of Gravity as much at every step, we would soon be fatigued by the effort which this requires, & by over or underdoing this Change of our Gravity we would be in danger of tumbling —

Weak

Weak rickety Children become infirm & If a 993.
weight is put upon a flexible rod standing obliquely, it bends it with a convexity
on the side furthest from the ground, & that principally on the middle of it, is
all of equal strength, or at any part weaker than the rest. —

Our Thigh & Leg is a Column standing obliquely with our Body above it, &
the knees are the weakest & middle part of this Column, they therefore bend
with the convexity of the Curve at the inside when there is sufficient strength
of the Muscles or Ligaments, or sufficient Rigidity in the bones to bear such a weight.

The Tendons are fixed & This is one of the most unlucky Bruises
that can happen to elderly people. The Aponeurosis of the Fascia lata with
the Tendons of several large muscles go over the great Trochanter of the Thigh;
Bone, for which reason a Contusion here is dangerous. I have several times
been bit in making a Prognosis here having promised a cure in a very short
time; but now from my repeated Experience after a very violent Blow I
would scarce engage to make a person walk firm in two years time —
The pain is often so violent that no part of the body can be moved. The Cure
is the same with that recommended in other Tendinous or what the Ancients
call Nervous parts.

Between Luxation & Fracture & From the Situation of the head
of the femur in its Acetabulum, dislocation of this Joint seems impossible,
to several; The most of Chirurgical Writers never fail to give Cases of this
kind, & believe they are extremely rare, and that which has often been de-
scribed as a Luxation, was really a Fracture of the Cervix supporting the
round head, yet there is no danger in this mistake, as they require precisely the
same

394 same Treatment. In my opinion the head of the Femur can only be dis-
located two ways, upwards upon the Os Ilium, or downwards towards the
foramen Thyroideum. An Instance of these I can thoroughly depend on, as
I met with it in my own practice, & some others I could only guess at
to be so. A Boy who had tumbled down over a garden Wall was brought to
me; upon feeling the Joint of the Femur, I could pass my fingers with the Te-
=gments into the empty Acetabulum while the head of the Bone I could feel
had slipped downwards. — I met with another Boy of a weak lax habit
and quite emaciated who had fallen down a pair of Stairs & was brought
to me, when I difficultly felt the head of the Femur lying upon the Dor-
=sum of the Os Humeri, quite out of its place —

In page I mentioned from Ruysch & Salzman Causes of Fractures
of the Neck of the Thigh bone, & have seen several who I judged had met with
the Misfortune from the Grating of the Femur & the Femur I observed while I
moved the Thigh; You will probably remember that among the set of
fractured Bones I showed you one of the Neck of the Thigh bone; the Reunion
was made between the greater & lesser Trochanter: By the little motion the
head of this Bone had, it became scabious, & if there had been no Reunion
so that it could not have been moved, it would have intimately reunited into
the Appearance of a continued Substance with the Acetabulum. I know nothing
of the Condition of the person to whom it belonged. — In reducing a Fracture
Surgeons are often in danger of placing the Malleoli in a horizontal plan, the
heel being supported directly at the lower part which necessarily would make
the Leg twisted or bended; this Caution therefore of Mr Winslow concerning
the Malleoli; with respect to each other, is necessary for Surgeons that they
may

may avoid such Errors in the reduction of a Leg —

The Reason of this Diversity in You see I have said that perhaps this may be the Reason, I am not fully satisfied with myself, & there is a Circumstance not adverted to here which may be thought to bring all the Vessels near a Par, which is that of these of the Foremen and Thigh being reflected & ascending in their passage thro' the Bone & Branches that are distributed to the Canals & Marrow. This oblique Passage must again be reflected as soon as they are got thro' it; so that the Medullary Vessels which in their passage descend thro' the Arms & Legs must make a retrograde ^{Curve} ~~Curve~~ to mount to the Canals & marrow in the upper part of the Bone. I don't see any thing in the course of the larger Vessels, of which the Medullary Vessels are branches, that makes a necessity of their passage in the manner they constantly do; & their constancy of course makes me believe there is some good purpose to be answered by it or some necessity for it which I doubt willing, I know.

Obliges us naturally & Because of the process, the oblique direction of the first Bone of the foot & consequently the whole foot is determined.

Transverse Fractures & Mr Deverel at Bristol in a paper inserted by him into the Philosophical Transactions gives us the Case of a Rupture of the strong Ligament connecting the Patella to the Protuberance of the forepart of the Tibia (which he ascribes to the strong Action of the strong Muscles fixed there into the Patella) without a fall or any other Violence.

I myself met with a Case of a man who did not fall to the Ground with his knee, nor was there any mark of Contusion or Discoloration, yet the bone

was

was evidently separated into two pieces. I had also an account of two Cases of the same kind from a Surgeon of some of the Dutch Troops that came over here in the year 1745.

Luxations seldom happen here & I have sometimes seen the Ligaments here so lax in Dropsies & swellings of the Joint that they could be made to suffer much more on the Os Femoris than it can do in a sound state, but I never saw one complete Luxation Tho' the two great Bones of the Joint are not separated, the Rotula frequently suffers a partial Luxation. I have twice put the Bone in its place when the internal depression was lodged in the external protuberance of the Thigh Bone. This Luxation was occasioned by a quick Turn in dancing a Minuet in both my Patients, & raised great pain, but was easily reduced when the Leg was fully extended, & I pressed the Rotula from the inside outwards.

White Swelling & I gave an Account of this Disease when talking of the Dropsie in p: and have seen more at the knee than all the other Joints of the Body, owing not only to the numerous parts here being hurt, but as it is exposed to more violent Injuries than any other parts are, being often sprained & bruised by the whole weight above it, & poor people being under a frequent necessity of using this Joint. The Ankles & Toes are parts next to it frequently seized with it for the same reason.

Such an easy bending Base & The difference betwixt a flexible & ^{firm rigid} Base is evident in many Cases. The Shock of a fall on a feather bed is little in comparison of falling on Stones. A horse that has a flexible Pastern is rode with greater ease than one with stiff one;

A Mason famous for harling houses, so that Rain could not penetrate thro' the Walls, fell from the high part of a gentleman's house to the ground & pitch, and on his feet, & did not strike any thing, by the way, & stood leaning by the wall, stupid, & not attempting to move; he was carried home, & was several months before he could walk, remaining an Idiot two years after the Accident when my Informer saw him last. The yielding of the Ligament must therefore be of great use in Walking, Jumping &c.

When the Ligaments are too weak & Ligament was so weak, that the foot was almost a semicircle, concave on the internal side, & convex on the external; but which would be made straight without any part being felt without the Bone, & therefore did not seem to be any deficiency of them, but only a great motion of the Os Naviculare, on the Astragalus, & a loss one of the Cuneiform bones on the Navicular. Considerable service was done by wearing a shoe long, which had a plate of steel on its inside with a strap passing thro' the middle, secured with a buckle. If Parents are careful, very young Children's feet may be brought to a right shape by constantly having pieces of Board and Bandages applied in such a manner as to keep the Leg straight. When this disease is neglected till near Adult age, it does not remedy, but the person must be assisted to walk better, than otherwise he would do, by Plates of Iron on each side of the shoe, to which Stalks of Steel are fixed & upon each side of the Leg kept by Garters, or Straps of Leather fastened with buckles;— What I formerly said of Sprains of the Wrists can easily be applied here, but I shall say nothing more of them excepting of the depending posture

posture, & necessity of employing the foot more than the hand. The Sprains of the Ankle and Tarsus are of worse consequences than these of the Wrists as they are apt to bring on White Swelling.

There little motion & The ends of Bones composing Joints are all ready to granulate when they remain long unremoved shoes both hinder the motion of the little Toes & press upon them; from the former cause the bones granulate & run together, & from the latter the granulated matter soon grows hard.

They seem to me & Nisbet (osteogeny) objects to this account of the Sissamond Bones, that the two of the first Joints of the great Toe are joined at Birth before the parts have undergone any prepulse, I carefully examined these parts in newborn Children, but never could find the least point ossified.

Their Os Frontis & The more compleat the Ossification, the more firm the Bones run into each other, & as all Women's Bones are less compact, they don't unite so firm as Men's do, The Cause for a Ridge or Depression in the middle of the Os Frontis was the more or less Ossification of the two parts of which it consists in a Child.

Their Sternum & It was long disputed whether the Sternum of Women be more raised or depressed than that of Men. In all the Skeletons I have ever examined it universally held, that Women's were more elevated in proportion. Some where seems to be a good final Cause for this Enlargement of the Thorax in women; for enlarged it must be by the increased distance of the Sternum from the Vertebrae, as it must require a greater length of Ribs and Cartilage

fastidage betwixt them. During the time of Gestation the Diaphragm is pushed into the Thorax by the distended ~~uterus~~ uterus, hence its cavity is diminished & the Lungs have not sufficient room to play, nor can they enough expand themselves for the Admission of the Air: Were there not some particular Contrivance to obviate this, they would labour under a continual Asthma till delivered.

Women during the time of Gestation breathe tolerably easy, tho' still they are obliged to use all their Muscles they can bring into Action; among the rest the Platysma Myoides comes into play, as it covers the whole neck, Chin & Cheeks, while it contracts downwards the Angles of the Mouth are pulled that way; hence the Mouth is considerably widened & consequently the Eyes more open & staring, hence Women with Child are said to be all Eyes and mouth. —

Weak women who have born & In one who has born many children the Sternum is flattened & depressed, which is occasioned by the strong motion of the Abdominal Muscles. Women who have born a great many Children are very liable when old to have their Spine crooked forwards, their head fall down upon their breasts, & to be round shouldered. This naturally happens, for when a Woman is with Child, her Centre of Gravity is entirely altered, her big belly throws her forwards, so that she would be continually falling that way, if she did not naturally throw the upper part of her body backwards to keep the Centre upon the feet, hence the Spine continuing so long in this Situation takes a set especially if the Bones are yet growing, but while the upper part of the body is thus held back, the head must necessarily go along with it, from which it will always be in danger

danger of falling down between the Shoulders. To remedy this, they bring it forwards, & keep it resting as it were upon the breast. Some Women after delivery, from Weakness cannot, or more commonly from Laziness will not give themselves the trouble to remedy this ugly posture: So they always continue with their head sloping down, which in a little renders them round shouldered. — In Women the Haunches are much broader than in men, so that Painters generally allow them three measures to the haunches & but two to the shoulders, whereas in men they let three go to the shoulders & two to the haunches. The Pelvis in the former is every way considerably larger than in the latter, which is certainly extremely necessary for allowing room to the growth and expulsion of the Fetus.

The Fetus is no way supported but continually presses down, & wares upon the Os Tinea, hence Women with narrow haunches are constantly liable to miscarriages, & from this a Woman with broad haunches may be looked upon as good for breeding, while she whose haunches are narrow has but a small chance for being so; She may indeed conceive but may often miscarry. This Rule experienced matrons are well acquainted with —

Finis for L^d. Smith.

